

PROCESSOR

Products, News & Information Data Centers Can Trust. Since 1979

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COVER FOCUS

Power & Cooling Update

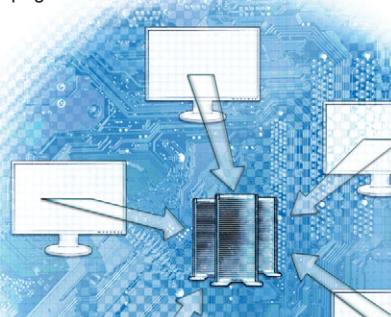
With summer already here, it's more important than ever to make sure your cooling plans are in tip-top shape. Here are some tips to help.

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Top Tech Trends In Four Key Areas

What technologies and trends will be shaping storage, networks, communication, and cloud computing in the near future? We talked with some industry insiders to find out.

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PHYSICAL INFRASTRUCTURE

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Specialty Racks & Cabinets

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AFCO Systems' new **High Density Switch cabinet** works well with switches from leading manufacturers and is designed to be future-proof

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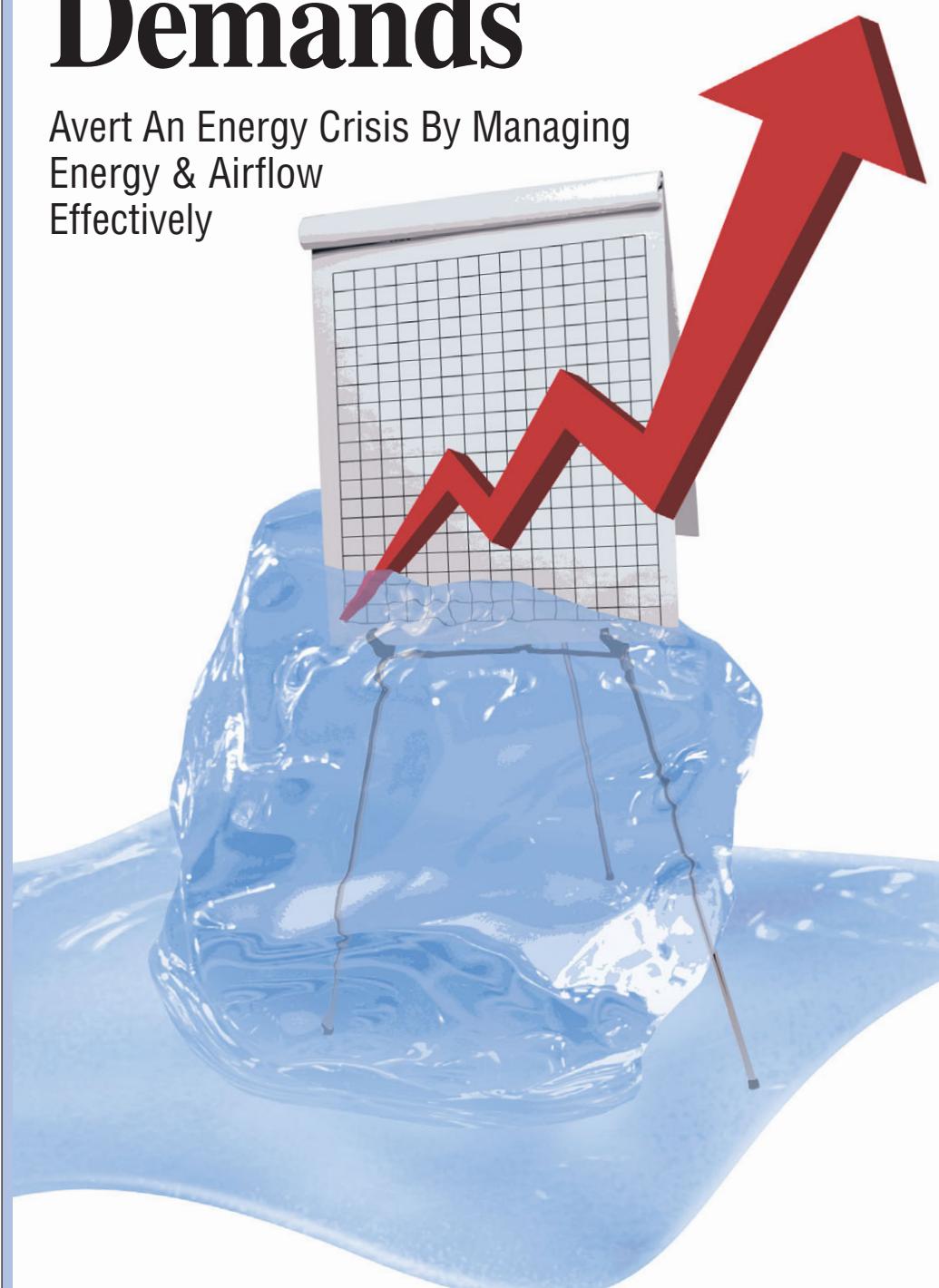
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Visit www.processor.com today.

Keep Up With Power & Cooling Demands

Avert An Energy Crisis By Managing Energy & Airflow Effectively



Key Points

- Mixing hot and cold air directly affects cooling and can cut capacity in half, so data centers should implement smarter layouts such as hot and cold aisles.
- Streamline raised-floor cooling by removing cable clutter and plugging cutouts and empty spaces.
- Efficient energy management is key to meeting demand. Virtualization is a good way to replace inefficient systems that drain excessive amounts of power and cooling resources.

by Chris A. MacKinnon

• • •

ACROSS VIRTUALLY every functional area in the data center, the key to success is visibility and staying ahead of the curve. However, keeping up with demands from power and cooling technology and equipment can sometimes put you behind the curve. In a perfect world, data center managers would be completely proactive, instead of reactive. However, in the real world, this is easier said than done. Here are a few tips for small to midsized enterprises that want to stay ahead in the power and cooling game.

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AMD's New Server Platforms

What Kind Of Performance Can You Expect?

by Nathan Lake

• • •

WITH THE NEW Opteron 6000 Series, AMD has taken multicore design to a new level—one with 12 or eight cores. The increased number of cores is ideal for today's e-commerce, virtualization, and database environments that are designed to natively allocate



cores and realize huge performance jumps when more cores are added to the mix. The jump in processing power in the Opteron 6000 Series may even let you install a single 2P or 4P server that can replace the duties of several older single- or dual-core servers. Here, we'll cover the variety of features found in the 6000 Series and how the features stack up to the six-core and quad-core Opteron series.

Clocking The Opteron 6000 Series

Gina Longoria, director of product management for AMD's Server and Workstation Division, says that the new 12-core Opteron 6100 Series processors can offer up to a 61% increase in performance over the six-core Opteron 2400 Series. What's impressive is that AMD found a way to double the processor cores from the six-core and quad-core Opteron lineups without significantly lowering the clock speed of the processor. For example, the Opteron 6176 SE represents the high end of 12 cores with a 2.3GHz clock speed, 1.8GHz Northbridge, and 12 processor cores, while the 8439 SE is the fastest six-core processor with a 2.8GHz clock speed and 2.2GHz Northbridge. Both feature an average CPU power of 105 watts.

Another upgrade in the Opteron 6000 Series is the built-in support for four memory channels and up to DDR3-1333MHz speeds via AMD's Direct Connect Architecture 2.0. Compared to DDR2 platforms of the six-core and quad-core Opterons, which support up to two memory channels and DDR2 memory, you'll experience an almost 2.5 times increase in overall memory bandwidth.

"The Opteron 6000 Series platform is also great for memory-intensive applications because of the memory footprint

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Also In This Issue...

News

SECURITY

■ When the average enterprise is already committing significant resources toward fending off common cyber-criminals, the concern of **cyberterrorism** might be a passing one at most page 30

■ Passwords are a critical element of computing security, and users should learn sound **password management** techniques to keep data secure page 31

■ **Insider threats** are becoming more common and more costly for enterprises, but they are harder to find. We offer some tips on how to find and prevent them page 32

■ AEP Networks offers a **modular approach to security and reliability** for enterprises that require top-notch security and communications capabilities page 33

MESSAGING & TELEPHONY

■ When Member Insurance Agency's headquarters changed offices, it took the opportunity to start from scratch with its **phone system** and implement OpenScape Office MX from Siemens page 34

CLIENTS

■ With the new Opteron 6000 Series, AMD has taken **multicore design** to a new level page 1

■ Borland Software offers open **application lifecycle management** products, services, and training .. page 35

■ The 2010 versions of the **Office and SharePoint** suites represent Microsoft's latest one-two punch in the enterprise productivity and collaboration market, but upgrading isn't an all-or-nothing proposition page 36

■ Although IT managers should begin looking at the **iPad** and its capabilities, its utility as a corporate work tool is still undefined page 37

SERVERS

■ **Product Spotlight: Servers** page 38

SERVICES

■ **Product Spotlight: Data Center Cleaning** page 40

■ According to CompTIA's Annual SMB Technology Trends Study, small and midsized businesses are set to invest two to three times as much in **managed services** this year as compared to 2009 page 42

DATA CENTER MANAGEMENT

■ Data center managers can often use technology to slash power consumption while boosting server and network efficiencies. Here are some ways to make your **data center more environmentally efficient** .. page 43

■ It would seem that **funding for IT** should be a top budget priority for enterprises, but executives and IT managers say that the best business performance is dependent on how, rather than how much, money is allocated .. page 44

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■ Security Vendor Finds 20% Of Android Apps Pose Danger

A report from mobile security software maker SMobile Systems claims that as much as 20% of third-party apps in the Android Market grant access to private or sensitive data. SMobile analyzed 48,694 apps, or about 68% of all applications available for download, noting that one in every five apps requests permission to access private or sensitive information that an attacker could use for malicious purposes. Further, SMobile found that one in 20 apps can place a call to any number without user interaction or permission, and 29 apps were discovered to request identical permissions as apps known to be spyware and categorized as such by SMobile's software. SMobile also found that eight apps explicitly request a specific permission that would let a smartphone "brick" itself, or render itself unusable.

■ Report Examines Which Domain Registrars Facilitate Crime

According to a report from independent Internet security research firm KnijOn.com, 162 of the Internet registrars accredited by ICANN to sell online domains are in breach of their contractual obligations. Intentionally or not, and by action or inaction, the registrars are guilty of supporting domains used for online fraud (the report singles out the underground pharmaceutical trade as especially prevalent recently), spam, malware propagation, and other crime, according to KnijOn. The report authors recommend better oversight of registrars and more vigorous enforcement of regulations against illicit activity.

■ China's Broadband Base Continues To Grow

China's broadband subscriptions grew more than 5% over the first quarter of 2010 and are

up almost 21% compared to last year, according to Robin Mersh, COO of the Broadband Forum. Mersh says that broadband continues to grow all over the world, but statistics showed that Asian countries, particularly China, have a larger growth rate than many other countries. China had previously overtaken the United States last year in total broadband subscribers and continues to outpace new U.S. subscription rates. China currently has 112.6 million subscribers, while the U.S. has about 87 million; globally, broadband subscriptions total about 484 million.

■ Government To Crack Down On Software Piracy

"We are committed to putting you out of business." Those were Victoria Espinel's words to pirates and counterfeiters of intellectual property in a news conference discussing a concerted effort the Obama administration announced in late June that included the release of a 60-plus-page report from the White House Office of the U.S. Intellectual Property Enforcement Coordinator. Espinel, who serves as White House intellectual property coordinator, said that "help is on the way" for those affected by copyright infringement. In addition to adding FBI agents to focus on the problem,

the administration plans to increase pressure on countries in which pirate Web sites operate, make government contractors check for illegal software, create a database of information relating to investigations that law agencies can share, identify sites trafficking pirated software, train local and state law officials and foreign governments, and use trade agreements to safeguard U.S. intellectual property.

■ FCC Looking Into Broadband Regulation

The U.S. FCC (Federal Communication Commission) is launching a notice of inquiry to investigate the possibility of reclassifying broadband so that the FCC can regulate it. FCC Chairman Julius Genachowski proposed limited regulations that will protect consumers' privacy, allow the FCC to enforce net neutrality, and classify broadband as a telecommunications service without forcing too much regulation upon ISPs. Republican members of the commission opposed the proposal, citing concerns that regulation would slow broadband growth and allow too much government control. The notice of inquiry passed with a vote of 3 to 2, which was split down party lines.

■ Tucker Tapped To Head Cisco's Cloud Initiatives

Although specific details of his role have not been confirmed, former Sun Microsystems executive Lew Tucker will head Cisco's cloud computing efforts as CTO. He will report to Padmasree Warrior and Tony Bates, Cisco CTO and senior vice president and general manager of Cisco's Service Provider Group, respectively. Tucker will build Cisco's cloud strategy, presumably including the company's Unified Computing System. Tucker was formerly the CTO and vice president of cloud computing at Sun from 2008 to 2010 and left after Oracle acquired the company in February. He also previously worked for Salesforce.com.



WATCH THE STOCKS

This information provides a quick glimpse of current and historical stock prices and trends for 13 major companies in the technology market.

Company	Symbol	Year Ago	June 10 \$	June 24 \$	% change from previous issue
AMD	AMD	\$3.64	\$8.01	\$8.13	▲ 1.5%
CA Technologies	CA	\$17.62	\$19.68	\$19.23	▼ 2.29%
Cisco Systems	CSCO	\$19.03	\$22.77	\$22.57	▼ 0.88%
Dell	DELL	\$13.65	\$13.07	\$12.93	▼ 1.07%
Google	GOOG	\$415.77	\$487.01	\$475.10	▼ 2.45%
HP	HPQ	\$38.12	\$46.50	\$39.03	▼ 16.06%
IBM	IBM	\$106.06	\$127.68	\$128.19	▲ 0.4%
Intel	INTC	\$16.31	\$20.55	\$20.32	▼ 1.12%
McAfee	MFE	\$40.12	\$32.81	\$31.43	▼ 4.21%
Microsoft	MSFT	\$23.79	\$25	\$25	unchgd.
Oracle	ORCL	\$21.63	\$22.20	\$22.22	▲ 0.09%
Red Hat Software	RHT	\$19.29	\$30.07	\$30.78	▲ 2.36%
Symantec	SYMC	\$15.84	\$14.43	\$14.42	▼ 0.07%

NOTE: This information is meant for reference only and should not be used as a basis for buy/sell decisions.

■ SMEs To Increase Spending On PCs & Storage

The NPD Group reports that 32% of small and medium-sized companies in the United States are planning to spend more on new PCs this year, while 45% are prepared to spend about the same on computers as they did in 2009. New PCs are the hottest ticket for IT capital expenditure this year, NPD says, although it's also an expense companies would postpone should economic conditions worsen again. And despite the fact that planned spending on storage, printing, servers, and network gear should

be down 32% on average in 2010, about 37% of the SMEs polled indicated that they would indeed buy more storage.

Researchers Say Nanowires Could Lead To Foldable Tablets

Bendable, foldable tablet computers might be in the future if research at Duke University pans out. Researchers there have discovered how to make copper nanowires in quantity, with one feature of this material being its flexibility. Because copper is much less brittle than the currently used material, indium tin oxide, and because it is much more abundant, it is a perfect substitute. The process of creating the material involves literally growing nanowires from copper "seeds" that form when copper crystallizes in a solution, in a process similar to the growing of crystals.



Council Calls For Alternative Energy Strategies

The AEIC (American Energy Innovation Council) is planning to meet with President Obama to discuss America's current energy strategy. The group, which includes Bill Gates, General Electric CEO Jeffrey Immelt, Bank of America Chairman Chad Holliday, and other business leaders, will offer five recommendations. Specifically, the AEIC suggests that the United States invest a minimum of \$16 billion per year on clean energy, provide \$1 billion per year to ARPA-E (Advanced Research Projects Agency-Energy), work with universities and labs to create centers of excellence, create an independent national energy strategy board, and establish a fund for a New Energy Challenge Program for large-scale pilot projects.

Toshiba & Fujitsu Agree To Merger In Japan

Toshiba and Fujitsu agreed to merge their mobile handset businesses to form what is now Japan's second-largest handset operator behind Sharp. The companies had previously discussed such a merger but failed to come to an agreement at that time. Reportedly, this move will see Toshiba folding its mobile phone business into a new company; Fujitsu will possess the majority share. Currently, Sharp leads the Japanese mobile handset market with a 26.2% share. The Toshiba and Fujitsu combination would claim an estimated 18.7% share of the market. The companies plan to wrap up a final contract by the end of July and reportedly hope to have operations up and running by October.

Qualcomm Faces Antitrust Complaint

UK-based Icera, which makes chipsets for mobile devices and is known for software-based chipset technology, has filed suit against U.S.-based Qualcomm, alleging anti-competitive behavior. Qualcomm contends that the allegations, which say Qualcomm links its own patents with those from other companies in a way that boosts sales of Qualcomm chips, are similar to allegations made in 2005 by other Qualcomm competitors that were eventually settled, dropped, and not investigated further by the European Commission. The European Commission says it's currently investigating Icera's complaint against Qualcomm; Qualcomm says it's reviewing the allegations and that "matters are at a very preliminary stage."

IDC Projects Strong Growth In PC Market

Global PC shipments were up 27.1% year-over-year during the first quarter, according to market research firm IDC. Its Worldwide Quarterly PC Tracker now predicts strong 2010 growth of 19.8%, boosted by "a measured, albeit sometimes bumpy, economic recovery, coupled with strong buying across both commercial and consumer segments." An even better sign, IDC reports, is that PC market revenue this year should surpass the previous revenue peak set in 2008 as buyers shift to higher-margin products. IDC says low to mid-range portable PCs still dominate the market, with mininotebooks or netbooks becoming less significant of a force.

SMBs Acknowledge Risk

According to Symantec's 2010 Global SMB Information Protection Survey, small and medium-sized businesses rank Web-based attacks as the No. 1 business risk. The survey reports that 73% of SMBs have suffered from an on-

line attack in the past year and lost revenue and/or recovery costs, and 42% report that the breaches resulted in stolen confidential or proprietary data. Symantec also learned that fear of losing data is a concern for nearly three-fourths (74%) of SMBs; however, 47% of those surveyed said they have yet to back up data. Creating backups has not even occurred to 39% of respondents. In 2009, Symantec reported that one-third of SMBs failed to install and run antivirus software and 50% didn't run backups; however, the security firm is pleased that SMBs are showing a new awareness this year, as 92% of SMBs currently run anti-malware software.

Mobile Payments On The Rise

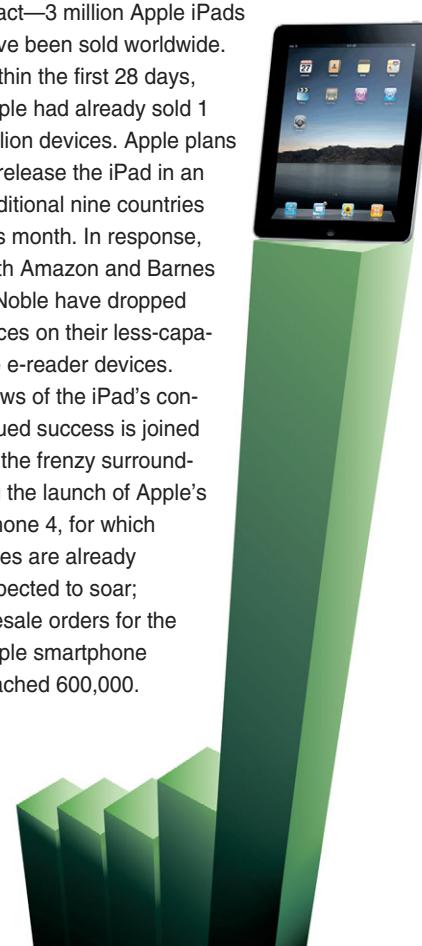
According to a new report from Gartner, there will be 55% more mobile payment users this year than in 2009. The research firm cites developing regions, such as in the Middle East and Africa, as mobile payment's biggest growth areas. Gartner's analysts think the reason for mobile payment's rise in the developing world is due to the population's more limited access to desktop PCs and banks. The most popular mobile payment technology is SMS (Short Message Service), but Near Field Communications, a technology that enables users to pass their mobile devices near a wireless receiver at the point of sale, is much less common due to technological roadblocks retailers must navigate. Gartner reports that in 2009, 70 million people worldwide used mobile payment methods, and the firm expects that by the end of this year, that number will grow to 108.6 million.

Supreme Court Rules In Favor Of Employers In Text Message Case

The Supreme Court ruled that a California police department did not violate an officer's constitutional rights by searching text messages he sent on a government-owned pager. The officer, Sgt. Jeff Quon, used his work pager to send several personal text messages, including some that were sexually explicit. Supervisors discovered the messages during an audit meant to determine if officers were using their pagers for personal reasons. The court's ruling indicates that government employees shouldn't assume that their electronic communications are protected against unreasonable searches as long as their employers have a legitimate work-related reason for the search.

iPad Sales Top 3 Million

In a little under three months—80 days, to be exact—3 million Apple iPads have been sold worldwide. Within the first 28 days, Apple had already sold 1 million devices. Apple plans to release the iPad in an additional nine countries this month. In response, both Amazon and Barnes & Noble have dropped prices on their less-capable e-reader devices. News of the iPad's continued success is joined by the frenzy surrounding the launch of Apple's iPhone 4, for which sales are already expected to soar; presale orders for the Apple smartphone reached 600,000.



Upcoming IT Events

Are you looking to learn more about data center or IT topics? Network with some of your peers? Consider joining a group of data center professionals. If you have an event you'd like listed, please send an email to feedback@processor.com.

- JULY -

AITP Washington D.C.

July 8, 6:30 p.m.
Alfi's Restaurant
4515 Willard Ave.
Chevy Chase, Md.
aitpwashdc.ning.com

• • • •

ISSA Northeast Ohio

July 8
Cuyahoga County Library-Parma South
7335 Ridge Road
Parma, Ohio
www.neoissa.org

• • • •

SQL Server Society of Las Vegas

July 8
The Learning Center of Las Vegas
777 North Rainbow
Las Vegas, Nev.
ssolv.com

• • • •

AITP Garden State

July 13
Jim Johnston's Steakhouse
58 Eisenhower Parkway Mountain Plaza
Roseland, N.J.
tech.groups.yahoo.com/group/aitpgardenstatechapter

• • • •

AITP Richmond

July 13
2015 Staples Mill Road
Richmond, Va.
www.aitprich.org

• • • •

ISSA New England

July 13
Weymouth, Mass.
www.issa-ne.org

• • • •

PASS Wisconsin SQL Server User's Group

July 13, 4:30
Microsoft Office
2176 Woodcrest Drive
Green Bay, Wis.
wisconsin.sqlpass.org

• • • •

Greater Wheeling AITP

July 14
Wheeling, W.Va.
www.aitp-wheeling.org

• • • •

ISSA San Diego

July 14
San Diego, Calif.
www.sdissa.org

• • • •

Southern New England SQL Server User's Group

July 14
www.snessug.com

• • • •

AITP Omaha

July 15
Omaha, Neb.
www.aitpomaha.com

• • • •

ISSA Upstate South Carolina

July 16
NuVox
301 N. Main St., Suite 5000
Greenville, S.C.
www.upstate-issa.org

• • • •

VMware Vsphere: Fast Track

July 19, 8 a.m.
Platform Labs
1275 Kinnear Road
Columbus, Ohio
www.platformlab.org

• • • •

AITP Southwest Missouri

July 20
Springfield, Mo.
aitpspringfield.org

• • • •

ISSA St. Louis Chapter

July 20
St. Louis, Mo.
stl.issa.org

• • • •

Oklahoma City AITP Chapter

July 20
Oklahoma City, Okla.
www.aitp.org/organization/chapters/chapterhome.jsp?chapter=40

For more Upcoming IT Events, see page 9.

PRODUCT RELEASES

The Processor Product Releases section includes brief overviews of data center products.

All products listed have been released recently, so use this section to get up-to-date with what's new on the market and to find products you need.

Manufacturers:

Do you have a new product that data center/IT managers would be interested in learning about?
Send your press release or product information to press@processor.com.

CLIENTS

■ Attunity PowerPivot Connector For Oracle

Attunity announced the availability of its PowerPivot Connector for Oracle, a solution for making Oracle data available in Microsoft PowerPivot. Attunity says the connector delivers 50% faster performance while allowing users to load large volumes of Oracle data into PowerPivot. A free trial is available on Attunity's Web site.

■ HP Test Data Management

HP launched HP Test Data Management, a platform designed to help customers accelerate application testing. The offering cuts business risk, enables users to thwart delays, ensures that data remains secure, and reduces the storage footprint and cost of testing data storage environments.

■ Kyocera Mita America FS-1370DN

Kyocera released the FS-1370DN, a 37ppm black-and-white compact printer with a standard paper capacity of 300 sheets and a maximum monthly duty cycle of 50,000 pages. Image quality maxes at 1,200dpi, and SSL, IPsec, IPv4, and IPv6 are supported. Additionally, a USB 2.0 port, front-mounted USB Host printing slot, and LCD are included. The printer is priced at \$599.

■ Lenovo ThinkCentre & ThinkStation

Lenovo released desktop computing products for multitasking and legacy application use: the ThinkCentre M90z all-in-one desktop, ThinkStation C20/C20x workstation, L2230x monitor, and L2321x monitor. The ThinkStation C20 is highly compact, and the ThinkStation C20x features extra memory and processing power. The M90z comes with Intel Core i3 or i5 processors.

■ NextComputing NextDimension Evo Plus HD

NextComputing announced its Next-Dimension Evo Plus HD portable computer. It has customizable features such as SATA and SAS hard drives, RAID options, and PCI expansion slots. It has dual quad-core Intel Xeon processors, up to 32GB DDR2 memory, and an integrated 17-inch HD display. It also comes in a screenless version.

■ Oracle Enterprise Content Management Suite 11g

Oracle debuted its integrated content management solution, Oracle Enterprise Content Management Suite 11g. The suite is part of the company's Oracle Fusion Middleware product and includes Oracle Universal Content Management 11g, Oracle Universal Records Management 11g, Oracle Imaging and Process

Management 11g, and Oracle Information Rights Management 11g.

■ Printronix P7000

Printronix announced the P7000, a cartridge line matrix printer in its metric product series. The P7000 is designed for supply-chain and back-office printing applications, and it features an easily replaceable cartridge and a clean-hands installation. The P7000 also offers a more uniform print quality and longer ribbon life.

■ Scalable Software Survey Asset Utilization V3.9

Scalable Software has released an upgrade to its Survey Asset Utilization product. Enhancements to existing abilities include advanced license management, cost analysis of entitlement value using Survey's asset-utilization measurement abilities, license key retrieval, application virtualization support, and full support for the latest OSes (including 64-bit versions).

■ Specops Software Specops Deploy

Specops Software announced the latest version of Specops Deploy. Highlights include capabilities for OS deployment, software and virtual applications, and integration of Microsoft Deployment Toolkit and Windows Deployment Services into Active Directory. There are also zero-touch installation options, and you can fully automate installation of computers from an empty hard drive to a finished workstation in less than 20 minutes, the company says.

■ Sybase Advantage Database Server 10

Sybase introduced the latest version of the Sybase Advantage Database Server, which is a high-performance, low-maintenance client/server database for small to medium-sized database applications. Sybase Advantage Database Server 10 now includes support for Delphi 2010 and

SYBASE®

Visual Studio 2010 tools, 64-bit platforms, Unicode, and ISAM table-based and SQL-based data access. Another advantage users will appreciate is the offering's ability to supplant legacy data stores and operate with minimal IT support. The latest version also includes several performance-optimizing tweaks for Advantage client applications. Sybase Advantage 10 starts at \$645.

MESSAGING & TELEPHONY

■ Astaro Mail Archiving

Astaro announced the release of Astaro Mail Archiving, a cloud-based service that

provides companies using Microsoft Exchange unlimited email storage for an indefinite amount of time for a monthly fee per user. The service is seamlessly integrated with Microsoft Outlook and offers its users intuitive and easy access to archived emails.

■ Motorola ES400

Motorola added the ES400 global EDA (Enterprise Digital Assistant) to its portfolio. The ES400 is a lightweight push-to-talk tool that runs on the Microsoft Windows Mobile 6.5 platform. Primary features include the MEUI (Motorola Enterprise User Interface), a bar code reader, WLAN support, built-in biometrics, and support for business-critical applications.

■ Rackspace Hosting Hybrid Email

Rackspace Hosting announced enhancements to its Rackspace Hybrid Email offering, which is a mix of Hosted Microsoft Exchange and the Rackspace Email platform. Updates include viewable calendars; improved Webmail; a simpler control panel; compatibility with Microsoft SharePoint; compatibility with Microsoft Outlook; and support for BlackBerry, iPhone, iPad, Android, and Windows Mobile.

■ Sherpa Software Mail Attender 4.6

Sherpa Software announced that its Mail Attender 4.6 now supports Microsoft Exchange 2010. It features PST migration capabilities including moving PST data to a personal archive. It also has administrative capabilities to oversee storage, email compliance, and policy enforcement. Mail Attender is highly scalable and can automate the scheduling of common policies, Sherpa says.

NETWORKING & VPN

■ BlueCat Networks Proteus v3.1 IP Address Management & Adonis v6.1 DNS/DHCP

BlueCat Networks announced two updated versions of products designed to streamline the IPAM, DNS, and DHCP tasks that administrators regularly face: Proteus v3.1 IP Address Management and Adonis v6.1 DNS/DHCP. New features include a redesigned management interface and increased detection and tracking abilities for administrators.

■ Brocade Virtual Cluster Switching

Brocade announced VCS (Virtual Cluster Switching), technology that is designed to offer more reliability, flexibility, and scalability for fabric switching than conventional Ethernet networking. Features include multipathing, a masterless and distributed control plane, and the ability to dynamically insert services into converged fabrics.

■ Data Comm For Business Ethernet Extender

Illinois-based Data Comm For Business announced the release of its Ethernet Extender, which allows enterprises to use existing telco copper wiring to extend their networks. The device can bridge two LAN locations up to a mile apart using standard telephone or RS-232 wiring. Depending upon the characteristics of the wire and its length, the throughput for the link may be as high as 50Mbps. The Ethernet Extender requires no configuration and

is transparent to—and independent of—network protocols. The device, powered by 12VDC from a 120 to 240VAC supply, is available with an optional rack chassis or DIN mount.

■ Firetide HotPort 7000

Firetide's HotPort 7000 product line has absorbed the HotPort 6000 wireless infrastructure mesh product line. The wireless infrastructure mesh solution comes with 802.11a/b/g capabilities and can be upgraded to dual radio or MIMO capacity. The platform features built-in interference mitigation, end-to-end QoS, integrated spectrum analysis, and network capacity planning.

■ Force10 Networks S-Series S60 GbE Switch

Force10 Networks added the S60 GbE switch to its S-Series access switch line. The company says the S60 is the industry's first top-of-rack GbE switch optimized for highly virtualized data center networks. The open automation-ready S60 also supports the JumpStart bare metal auto-configuration feature, ultra-deep packet buffering of 1.25GB, and buffer allocation flexibility and tuning via Force10 Operating System software.

■ HP Business Service Management 9.0

HP unveiled the latest version of the HP Business Service Management software suite, which is an application performance and availability management suite. HP BSM 9.0 offers automated operations, cloud-ready and virtualized operations, a single integrated view, collaborative operations, and a run time service model.

■ Lancope StealthWatch FlowSensor AE 3000

Lancope announced an appliance that fits into its StealthWatch family, the StealthWatch FlowSensor AE 3000. The appliance generates NetFlow data and packet-level metrics to enable network visibility across 10 gigabit environments and to provide simple network performance

Lancope.

and security monitoring. The StealthWatch FlowSensor AE 3000 connects to a 10G network via a switch port analyzer, mirror port, or an Ethernet test access point. It then sends records, including round-trip time, server response time, and other metrics, to StealthWatch Flow Collectors for analysis. Lancope says the appliance helps companies optimize their security and performance while reducing costs. StealthWatch Flow starts at \$27,995.

■ NetScout nGenius Service Delivery Manager

NetScout released nGenius Service Delivery Manager, a real-time service dashboard offering visibility into service delivery, particularly in how services are delivered and used. The dashboard offers real-time and historical views of service domains that users define. Additionally, the dashboard automatically detects service quality problems and emerging security threats.

■ Netuitive 5.0

Netuitive released its Netuitive 5.0 management solution for cloud servers. The

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PRODUCT RELEASES

newest version features Unified Visualization that provides end-to-end service updates. Netuitive has included a Performance Management Database that absorbs data from existing system monitoring tools and uses it to provide a full picture of network performance.

■ New Boundary Technologies

Prism Patch Manager 7.0

New Boundary Technologies announced Prism Patch Manager 7.0, a scalable software patch management solution that automatically secures Windows systems from software vulnerabilities. The upgraded version features a new content



architecture with remediation packages from the original vendors downloadable shortly after the release, multilanguage packages for domestic and international delivery, and patch titles that match Windows Update titles. Other additions include enhanced installation flexibility supporting Windows 2008 R2 and Windows 2003 servers; the use of existing SQL servers; and an improved user interface with redesigned workflow-based consoles for smoother navigation, mouse-over dropdowns in the menu, and categorically organized reports.

■ PJ Technologies Goverlan Remote Administration Suite v7

PJ Technologies released the Goverlan Remote Administration Suite v7, which is supported by Microsoft Terminal Services servers and Citrix XenServer. Goverlan Remote Administration Suite v7 offers secure remote administration and remote control of the console session of a machine.

■ Quest Software Foglight Network Management System

Quest Software announced its Foglight Network Management System, which lets network administrators view real-time performance, analyze traffic, receive advanced email and SMS alerts, support VoIP system health, and map the network across local and distributed environments. Foglight NMS starts at \$2,475.

■ Quest Software Server Administrator For SharePoint

Quest Software unveiled the Quest Server Administrator for SharePoint, which is an administration tool that lets users minimize risk and ensure optimum support, performance, availability, and security. Quest Server Administrator for SharePoint starts at \$1,495.

■ Silver Peak VX WAN Appliances

Silver Peak has released VX virtual WAN-optimized appliances, which are software-only versions of the company's NX appliances. Both appliance families use network acceleration, integrity, and memory to overcome latency, correct pack delivery issues, allocate WAN resources, and maximize WAN bandwidth use. The VX-1000, VX-2000, VX-3000, and VX-5000 range from 4Mbps and 8,000 simultaneous user sessions to 50Mbps and 64,000 simultaneous user sessions.

■ Solarflare SFN5121T

Solarflare released the SFN5121T, a branded dual-port, triple-speed 10GBASE-T server adapter. It's ideal for high-performance virtualized data centers because it supports the PCI SIG SR-IOV standard

and accelerates guest applications in virtualized environments. Combined with the availability of multicore servers that can take advantage of 10Gbps, IT and data center managers now have the products they need to build cost-effective 10GbE networks.

■ Spiceworks IT Desktop

Spiceworks IT Desktop is a free network management program that's designed with small to midsized businesses in mind. From the intuitive interface, you can inventory your network PCs, monitor



and manage your network, control change and configurations, and more. For example, with the help desk portal, you can create, receive, assign, and track tickets. The Web portal is also a convenient place to share maintenance schedules, provide contract info, and post IT alerts. The network tools are comprehensive, letting you see when a user installs a program he shouldn't or even when the toner is low. An email management tool helps you control the message load on your Exchange server. For more on this product, see page 19.

PHYSICAL INFRASTRUCTURE

■ Coolcentric & SynapSense Data Center Energy Management & Monitoring

Coolcentric and SynapSense have teamed to release energy monitoring and management services to data centers via Coolcentric's Professional Services segment. The collaboration will include Coolcentric's EMS (Environmental Monitoring System) with SynapSense's Data Center Monitoring and Energy Management product consisting of sensor nodes, gateways, and server platforms for accessing real-time operating conditions.

■ Lantronix MatchPort NR

Lantronix MatchPort NR is a secure, embedded, and wired networking device server module. As an addition that complements MatchPort b/g Pro, MatchPort AR, and MatchPort b/g, MatchPort NR is a complete device server that includes a network protocol stack, serial-to-Ethernet application, and built-in Web server device configuration and communication.

■ Opengear ACM5004-2-I

Opengear released the ACM5004-2-I, an industrial device server that provides a secure monitoring and control solution for managing IT infrastructure. The server includes features such as power control, SNMP support and integration, security, environmental monitoring of temperature and humidity, and easy programmability. The ACM5004-2-I is available in three models, all with four serial ports.

■ RF Code Starter Pack Services

RF Code is providing professional installation and training services for its Starter Packs, which help organizations automate the real-time tracking of their data center and distributed IT assets. These packs also help companies deploy wire-free environmental monitoring in areas with high heat, humidity, and water.

■ Server Technology Sentry Power Manager Version 4.2

Server Technology released the newest version of its Sentry Power Manager software. Version 4.2 features a simpler operating system and deeper security options,

such as login lockouts and specific user blocking. It also provides temperature, power, outlet, and infeed trends as well as third-party PDU support.

■ Siemon ConvergeIT

Siemon launched its ConvergeIT intelligent building cabling program, which combines Siemon's network infrastructure expertise and technical and installation support capabilities with its comprehensive structured cabling product line. The result is a straightforward process to implement a converged, IP-based intelligent building cabling system. Siemon's ConvergeIT also supports the facility's various low-voltage applications on a single IP-based structured cabling system, rather than on separate and often proprietary cabling plants.

SECURITY

■ Altor Networks Altor 4.0

Altor Networks announced the availability of Altor 4.0, which features security enhancements that provide visibility into internal virtual machine states to offer accurate compliance assessment and automated security enforcement. Altor 4.0 can also automatically detect unauthorized changes to VMs in virtual and cloud environments, as well as quarantine troublesome VMs and alert IT administrators.

■ BeyondTrust PowerBroker For Virtual Desktop Infrastructures

BeyondTrust announced PowerBroker for Virtual Desktop Infrastructures, a tool that provides centralized security and compliance via privilege delegation for servers and desktops in virtualized and cloud infrastructures. BeyondTrust says PowerBroker has the ability to let end users run all necessary Windows applications, processes, and controls under a certain policy, which is designed to increase security, compliance, and efficiency. Additionally, PowerBroker supports multiple desktop virtualization vendors, including Microsoft, Citrix, and VMware, and offers a cross-platform package for privilege management in virtualized environments and cloud infrastructures.

■ HP Comprehensive Applications Threat Analysis

HP released the HP Comprehensive Applications Threat Analysis lifecycle security assessment service, part of the HP Secure Advantage portfolio. The service gives users architectural and design guidance along with security recommendations. The included Security Requirements Gap Analysis reveals security regulation oversights, and the Architectural Threat Analysis reduces rework costs from vulnerability-finding activities.

■ Lieberman Software Enterprise Random Password Manager

Lieberman Software has added features and improvements to its Enterprise Random Password Manager. These additions are designed to increase visibility and control for ASP.NET Web applications. The features will help manage physical and virtual computers and network appliances, hypervisors, databases, middleware, and line-of-business applications.

■ McAfee Total Protection For Server

McAfee released McAfee Total Protection for Server software, a comprehensive solution for security and compliance. The software protects against targeted and insider attacks. It includes application whitelisting, change policy management, and policy auditing to ensure that

only authorized processes and applications can run. For added defense and on-demand scans, the package contains enterprise antivirus.

■ SEPATON Secure Erasure

SEPATON announced the release of Secure Erasure, a data protection solution for auditable erasure of information on virtual tape cartridges. Secure Erasure allows storage administrators to schedule cartridges for a total data overwrite in a process that conforms to NIST (National Institute of Standards and Technology) guidelines. Secure Erasure costs \$5,000 per node.

■ Vircom modusGate 5.0

Vircom upgraded its modusGate software to version 5.0, which features anti-spam improvements, an enhanced Sender Reputation System, and a fully integrated Policy Management module to prevent data leakage through email. The complete inbound and outbound solution enables organizations to control what content can and cannot leave or enter their local network through email and how it should be processed. The Modus 5.0 Sender Reputation System delivers real-time IP reputation to counter ever-evolving modern botnets, and it also adds quarantine report delegation, which allows end users to offload the reviewing of their quarantine report to another person without affecting security or privacy.

SERVERS

■ Kaminario K2

Kaminario introduced the Kaminario K2, a data appliance that provides millions of I/Os for applications that require fast and reliable access to data. Designed for time-sensitive business applications, the Kaminario K2 utilizes existing computing and data storage, is scalable, simple to manage, and eliminates data access bottlenecks. The Kaminario K2 costs \$200.

SERVICES

■ EMC Consulting Services

EMC announced a portfolio of EMC consulting services. The services are designed to improve business intelligence and increase the value of EMC information infrastructure within Microsoft SharePoint 2010 (for business and IT stakeholders), Microsoft SQL Server 2008 (for customer-centric industries), and Microsoft Windows 7 (for a centrally managed desktop).

■ Entrust Credentialing Service

Entrust announced a comprehensive multipurpose smartcard technology called Entrust Credentialing Service, which is designed to help organizations issue unified smartcard credentials. Features include identity vetting, data capture, personalization, printing, issuance, revocation, and the ability to use one credential for multiple nodes of access.

■ HP Solution Management Services

HP introduced the HP Solution Management Services to deliver software support and consulting advice to clients to help cut costs and improve efficiencies. The HP Solution Management Services and HP Business Availability Center Anywhere are available now, but the HP Business Service Management 9.0 Services will be available in August.

■ Kaseya MSE-G1

Kaseya released the Kaseya MSE (Managed Service Edition)-G1, an integrated

Go to Page 6

PRODUCT RELEASES

Continued from Page 5

management solution for small and medium-sized managed service providers. The MSE-G1 reduces the complexity of systems management by automating routine



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IT tasks for maintaining system availability and security. Automated features include auditing and inventory, monitoring, trouble ticketing, management reporting, patch management, scripting, and flexible administration and customization. The Kaseya MSE-G1 also includes the IT Service Delivery Kit, which gives users reports, predefined views, and monitor sets and scripts for common IT scenarios and tasks. It includes support for systems running Windows and Mac operating systems. Pricing for 25-seat systems starts at \$1,000.

■ Winchester Systems VMware Professional Services

Winchester is now providing a variety of VMware-related services for its customers. The VMware Technical Alliance Partner and vendor of compatible storage hardware now provides consultation, sales, deployment, and other services including disaster recovery, business continuity, and training, Winchester announced.

STORAGE

■ Acronis Drive Monitor

Massachusetts-based backup and security solutions provider Acronis has released Acronis Drive Monitor, a free disk-monitoring tool for enterprises and consumers. Drive Monitor is a download that monitors the health of hard drives and alerts users to potential problems by sending an email or displaying an on-screen message. The utility provides a color-coded summary of the disk's health as well as weekly reports.

■ Agilysys SABR

Agilysys' Technology Solutions Group released SABR (Scalable Available Backup and Restore), a multivendor data protection solution that is designed for backup, restore, and deduplication operations. The system incorporates contributions from Symantec (namely its NetBackup OpenStorage product), Hitachi Data Systems (Adaptable Modular Storage

Agilysys...

2000 systems), and FalconStor (Virtual Tape Library with deduplication capability). Agilysys touts SABR's speed and scalability, and the company says SABR offers high availability of data and complete failover protection. SABR comes in configurations targeted toward the remote or branch office as well as full-scale editions suitable for the global enterprise data center.

■ Asigra Cloud Backup v10

Asigra announced Asigra Cloud Backup v10, designed to extend the reach and performance of the Asigra platform across a variety of computing environments, including SMEs. Features include protection for

laptops, desktops, servers, data centers, and cloud computing environments. The platform also backs up laptops in the field, provides tiered recovery, and offers advanced security and encryption.

■ ATTO ExpressSAS R60F, R680, R608 & R644

ATTO released a series of ExpressSAS adapters with 6Gbps SAS/SATA and broad RAID support. They include the R60F (16 internal ports), R680 (eight external ports), R608 (eight internal ports), and R644 (four external/four internal ports). Each uses Marvell's 88RC9580 RAID-on-chip controller and ADS technology that controls the acceleration of data transfers.

■ Cisco Smart Storage

Cisco announced Cisco Smart Storage, a family of affordable desktop network storage solutions. The two-, four-, and six-bay devices feature integrated business applications, highly secure remote and Web access, on-disk data encryption, simplified configuration and management, file sharing across all popular operating systems, and energy efficiency.

■ Dell Business Ready Configurations

Dell announced a number of data center solutions designed to offer efficiency without compromising performance. Products include the Dell EqualLogic and PowerVault storage platforms; Dell PowerEdge servers and systems management capabilities; Dell PowerConnect Networking Solutions; and several storage, virtualization, and support services.

■ Diskeeper Disk I/O Optimizer For SANs

Diskeeper announced the release of the first disk I/O optimization solution for SAN-attached systems. The product is the result of requests from enterprise customers and company research. The solution helps to eliminate file fragmentation on Windows direct-attached storage drives to maximize performance and reliability. The SAN-targeted solution will automate many manual requirements, as well.

■ Nasuni Filer & The Security Challenge

Representing a new class of storage product, the Nasuni Filer lets you allocate additional storage capacity without having to deploy more hardware. The Nasuni Filer takes advantage of cloud storage, provisions storage capacity auto-



matically, and uses high-performance caching, so it can be used as primary storage instead of or in combination with traditional file servers. Nasuni realizes that many enterprises are reluctant to use cloud storage because of fears over data leakage, which is why Nasuni Filer uses OpenPGP to encrypt all data before it leaves customers' premises. Nasuni is set out to prove how secure Nasuni Filer is by issuing a challenge: Nasuni has made public a number of files, including a Prize File, written to the cloud by the Nasuni Filer. The first person to decode the file will win \$5,000. For more information, go to www.nasuni.com.

■ NetApp SANscreen 6.0

NetApp announced version 6.0 of its storage management solution, SANscreen. Version 6.0 is integrated with BMC Software's Atrium Configuration Management Database, allowing users to

extend IT service management solutions to the storage domain. SANscreen also measures, analyzes, and mitigates the risks associated with using NetApp or other storage efficiency technologies.

■ O&O Software O&O DriveLED 4

O&O Software has announced O&O DriveLED 4, a program that warns of impending disk failure on Windows servers. O&O DriveLED 4 is available in three versions: the Professional Edition for desktop computers and the Workstation and Server Editions for control across networks. The DriveLED 4 monitors all S.M.A.R.T. properties and network drives.

■ OCZ Vertex 2 Pro & Vertex 2 EX

OCZ released two SAS and SATA II SSD models powered by the SandForce SF-1500 controller. The MLC-based Vertex 2 Pro and the SLC-based Vertex 2 EX incorporate tweaks for longevity, data integrity, and performance. The 2.5-inch drives are available in 50GB, 100GB, and 200GB models.

■ Permabit Technology Albireo High Performance Data Optimization Software

Permabit Technology introduced Albireo High Performance Data Optimization Software. As the first OEM-embedded data optimization program, it is designed to provide primary data deduplication for hardware and software storage OEMs, the company says. It offers a high-performance index engine, content segmentation, and a software development kit.

■ Pervasive Software Pervasive DataRush

Pervasive Software announced a comprehensive update to Pervasive DataRush. The update includes extensible libraries for data preparation and analytics as well as the implementation of the KNIME open-source workflow interface for data mining. As a parallel data flow platform, Pervasive DataRush is



engineered to prevent performance issues in relation to data-heavy programs during cleansing, collecting, and deduplicating data. It is designed to cut runtimes for data preparation and analysis and can work through large datasets while offering a JavaScript-based interface. Pervasive DataRush also includes a new core analytics library and expanded data preparation capabilities.

■ Quest Software LiteSpeed For SQL Server

Quest Software released its latest version of LiteSpeed for SQL Server, which is an SQL Server backup and recovery solution. Quest's offering is capable of shrinking the database backup footprint up to 85% more than traditional compressed backup software thanks to its Fast Compression technology.

■ Quest Software Quest OnDemand

Quest Software released Quest OnDemand, a Windows Management SaaS solution that provides Active Directory recovery and Windows log management for small to midsized enterprises. Quest OnDemand Recovery for Active Directory provides flexible, scheduled backup and object-level recovery of Active Directory data, while Quest OnDemand Log Management collects and analyzes Windows system event data.

■ Sans Digital AccuNAS AN4L

Sans Digital released the AccuNAS AN4L, a unified iSCSI/NAS storage system that includes a dual-core Intel Atom D510 processor. The four-bay AN4L (\$549) can provide more than 80MBps data transfer speeds in RAID 6, the company says. It also supports RAID 1 and 5 and has two Gigabit Ethernet ports.

■ SGI COPAN 400

SGI released the COPAN 400 platform, the next generation within the company's COPAN line of persistent data storage products. SGI says the 400 brings enhancements to performance, density, and management of very large volumes of persistent data at considerable power savings. The COPAN 400 has a nearly 1.8-petabyte capacity in one cabinet and offers more than four times the performance of its predecessor (up to 23TB per hour throughput at full bandwidth). The platform comes in COPAN 400T/TX (virtual tape library) and COPAN 400M



(native MAID) configurations. The 400T/TX is now available. The 400M will be released later this year.

■ SGI InfiniteStorage 5000

SGI introduced the SGI InfiniteStorage 5000 RAID storage system that employs 6Gbps SAS technology. The RAID system offers multiprotocol host connectivity, improved scalability and performance,



flexible drive support, data security, and energy conservation. SGI says it's also ideal for the SGI COPAN MAIN solution and the SGI Altix UV server and Rackable rackmount server environments.

■ Spectra Logic T-Series

Spectra Logic announced LTO-5 tape drives and media cartridges in its T-Series of tape libraries. The LTO-5 cartridges feature a 1.5TB native capacity and 3TB capacity with compression. The drives have a native transfer rate of 140MBps (280MBps compressed), are backward compatible with LTO-3, and have low power and cooling requirements, the company says.

■ TOLIS Group LTO-5 Updates

TOLIS Group has updated its tape-based backup and archive storage solutions to include an LTO-5 tape drive, autoloader, and library technology. LTO-5 offers increased performance (140MBps read and write) and capacity (1.5TB per tape), and it's available in SAS (Serial Attached SCSI) and FC (Fibre Channel) configurations.

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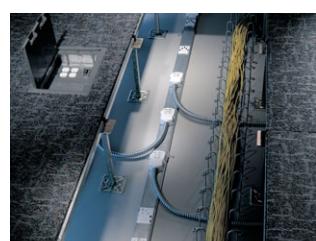


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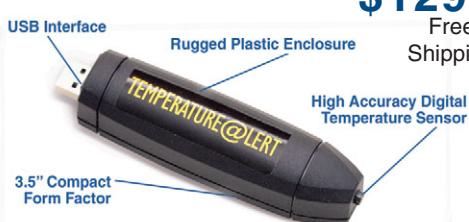
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Keep Up With Power & Cooling Demands

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Prevent Hot & Cold Air Mixing

Steve Borley, vice president of sales and marketing at Data Specialties (www.dataspecialtiesinc.com), says it's important to

Top Tip: Baseline Your Environment

Every data center should complete an IT asset inventory, according to Steve Keilen, vice president of marketing at Viridity Software (www.viridity.com). "Data centers should measure utilization and consumption and tie all IT assets back to business usefulness," he advises. "Are these assets supporting business-critical applications? Is the IT asset an orphan—not supporting any applications at all, yet still consuming energy?"

By identifying underutilized or useless IT assets and either consolidating or removing the asset from the floor, Keilen says IT management can eliminate the risk of wasting valuable cooling resources on non-business-critical IT assets. He says data center managers need to seek tools that will enable them to automate asset and capacity management, predictive analysis, power and cooling modeling, ongoing optimization measurements, and reporting, as well as in-depth monitoring of all physical and virtual IT assets. He adds, "Everything must be linked back to the level of business usefulness."

set up racks in rows configured with hot and cold aisles. "Providing hot or cold air containment systems prevents the hot and cold air in the room from mixing," Borley says. "This will improve the overall efficiency of the cooling system by allowing the hot air to return directly back to the cooling units." He says that for rooms with raised floors, you should install return air systems that utilize the space above drop ceilings for warm air to return to CRAC (computer room air conditioning) units.

"Don't forget that you can always raise the room temperature," Borley adds. "The cooling in data centers is no longer required to be 68 to 72 degrees Fahrenheit. New standards are being implemented with higher operating temperatures of 75 to 78 F."

According to Wally Phelps, product marketing manager and airflow evangelist for the AdaptivCool division of DegreeC (www.adaptivcool.com), added IT load does not always mean more cooling units are needed. He says that often there is more than enough capacity in place but it's not being utilized effectively.

"Industry and utility company experts recognize the role that airflow distribution plays in data center cooling," he explains. "Undesirable mixing of hot and cold air in the data center space directly affects cooling and can cut capacity in half. Many causes of mixing are correctable, and cooling capacity can be recovered at much less expense and with higher reliability than adding more cooling units." Phelps says that how much capacity can be revived depends

on the severity and actual root causes of problems.

Manage Airflow Under Raised Floors

When it comes to elevation and air conditioning, data centers must have a raised floor and an efficient computer room air conditioner that will effectively push cold air up from beneath the raised floor to cool the room, says Steve Keilen, vice president of marketing at Viridity Software (www.viridity.com). "Hot air given off from the IT assets will naturally rise where it should be captured by the air conditioner, cooled, and then recirculated," Keilen

Manage Data Center Energy Efficiently

In Borley's opinion, UPS and PDU systems can be sized to scale up with the IT equipment load. "As the load increases, additional modules can be added to the system," he says. "This is a pay-as-you-grow concept, but it also helps with the electrical system efficiency. The UPS systems are more efficient at higher operating loads. Some electrical system components are not scalable, such as the stand-by generator or utility service." Borley says these components should be sized in logical block sizes allowing for future growth.

"Undesirable mixing of hot and cold air in the data center space directly affects cooling and can cut capacity in half. Many causes of mixing are correctable."

- *AdaptivCool's Wally Phelps*

says. "The ability to reduce the amount of cold air mixing with hot air also improves heat load and can dramatically reduce cooling costs."

For older data centers, Borley says it's important to remove unused cabling from under the raised floor and seal floor tile cuts to prevent cold air from leaking. He says this will improve airflow and efficiency of the cold air delivery systems. "Balance the airflow by using perforated floor tiles with dampers and position tiles where required," he advises. "Do not locate perforated tiles in front of down-flow air conditioners. This can cause short cycling because the cold air gets pulled back into the unit."

Borley says it's also important to virtualize servers if you want to keep up with power demands. "With the cost of energy," he says, "it pays to virtualize your IT servers and replace outdated systems that are not energy efficient. This will reduce the data center's overall energy consumption."

Additionally, Keilen says careful attention should be paid to server capacity placement and management (that is, power, cooling, and space). Candidates for "technical refresh" should be identified, and any stranded server capacity should also be discovered. Optimal server capacity placement must become a priority due to its profound impact on power and cooling. □

AMD's New Server Platforms

Continued from Page 1

availability," Longoria says. The 6000 Series supports up to 12 memory modules to help you reduce the amount you spend on RAM. For example, the greater memory flexibility gives you the ability to fill

issues, which can increase the efficiency of HyperTransport 3.0.

If your enterprise has or will move to a virtualized environment, a 4P server is ideal for handling the demands made to the CPU, input/output, and memory resources.

high-performance computing needs. Instead, you can focus on how many you want and what type of memory you'll install.

In addition, the 6000 Series supports a variety of power and performance controls to help you save money when the processors are idle. It can automatically implement a C1E power state, which reduces the CPU speed when the server is performing less CPU-intensive tasks, and IT staff can remotely monitor the power and cooling of processors through AMD's APML (Advanced Platform Management Link). For example, an APML-enabled server can let you manage platform power consumption through P-state limits and CPU thermals without going into the BIOS. With AMD's CoolSpeed technology, the server can also automatically reduce P-states when a temperature limit surpasses safe operational settings.

What's Next?

AMD's Opteron 4000 Series processors are designed for low-cost, low-power

Key Points

- With the Opteron 6000 Series, you'll get more cores and more memory, and the 6000 Series offers improved bandwidth and support for faster memory speeds.
- You won't pay a luxury tax for investing in a 4P server.
- 6000 Series processors include a variety of ways to automatically and manually manage power and cooling.

the server with lower-capacity RAM, such as 2GB and 4GB, to avoid investing in costly 8GB modules for high-capacity environments. Those that work in high-performance computing environments will appreciate that the Opteron 6000 Series is scalable up to 4P and 48 dimms, which would be great for handling peak loads with a low response time.

HyperTransport 3.0

System bandwidth among the input/output paths, such as processor-to-processor and processor-to-memory, is a key benchmark when dealing with memory and processor-intensive tasks such as cloud computing. The Opteron 6000 Series delivers speeds up to 6.4GBps to improve the balance between processor and memory speeds and increase overall scalability. The same technology can be found on AMD's six-core and quad-core Opteron series. AMD also built HyperTransport Assist technology into the Opteron 6000 Series to reduce probe traffic and resolve probe

However, many organizations have stayed away from 4P servers because there has traditionally been an extra cost associated with 4P-capable processors. The entire Opteron 6000 Series is compatible with 1P, 2P, and 4P servers, so you won't pay a premium for the parts to meet your

servers. The 4000 Series processors will reportedly be available in quad- and six-core models and support two memory channels. In 2011, AMD expects to release 12- and 16-core processors within the Opteron 6000 Series platform, while the low-power 4000 Series is expected to include six- and eight-core varieties. AMD says that all models will feature the same core with the SR500 Series chipset and G34 or C32 sockets. □

A Breakdown Of Your Opteron Options

Server Platform	Core Counts	Core Frequency Speed Options	Wattage Options	Best For
Opteron 6000 Series	12 and 8	2.3 to 1.7GHz	105 and 80	High-performance computing, virtualization, database and business applications, and cloud computing environments
Six-Core AMD Opteron	6	2.8 to 1.8GHz	105, 75, 55, and 40	Web, cloud computing, database, and virtualization tasks
Quad-Core AMD Opteron	4	3.1 to 1.7GHz	105, 75, 55, and 40	IT infrastructure, Web, and email or collaboration work

COVER FOCUS

In Case Of Emergency

Take Steps Now To Prevent A Power & Cooling Disaster Later

by Bruce Gain

MANY ENTERPRISES make significant investments to prepare for data center power and cooling emergencies. However, even after implementing backup infrastructures and creating emergency procedures that staffers are supposed to follow, many data center managers learn the hard way that they are not as well-prepared as they had thought. Instead of servers going offline for a few minutes, entire data center operations can shut down for days at a time due to a lack of proper planning when the unexpected happens. Here are

Key Points

- Make sure that the backup system can maintain power to the chillers as well as to the servers and that there is enough backup cooling capacity to handle the load.
- Certain maintenance procedures should be scheduled on a regular basis throughout the year. Summer is the best and most crucial season for testing.
- Ensuring that the layout of the backup power and cooling system is identical to the main system will cut down on time wasted looking for controls.

some ways to help you make sure that your data center's operations can handle just about any power or cooling emergency that Murphy's Law can throw at it.

Get The Chillers Right

Your server backup power systems may be as reliable as possible, but not having the right chiller backup power in place in the event of an emergency means temporary server shutdowns at best or, at worst, the meltdown of servers due to overheating.

"It makes no sense to put a generator in to handle data center power if the cooling plant isn't also backed by a generator, because you'll have to shut down systems to prevent overheating," says Nik Simpson, a senior analyst at Burton Group.

Ensuring that there is an adequate water supply for cooling is also crucial, Simpson says. "Many cooling systems need a clean supply of chilled water, which can be provided by refrigeration units at the data center or piped in from the local water utility," he explains. "Either way, you need a backup plan for a second chilled water source if you want to cover the contingency of a refrigeration failure or [other disaster]." Simpson cites examples of companies that have gone so far as to drill wells to tap underground water sources or to build their data centers close to lakes, rivers, or canals.

In the big-picture sense, the concept is to plan ahead to ensure that the proper backup

cooling capacity is in place so that the data center can run on the backup source as long as it has to, says Eddie Stevenson, CIS marketing supervisor at MovinCool (www.movincool.com). "Some of our distributors have reported that their clients have lost \$500,000 in just [one emergency] because they didn't have the proper cooling in place," Stevenson says.

Regular Maintenance Is Crucial

Cooling and power emergency preparedness requires certain maintenance procedures that should be performed on a regular basis around the year.

"If you just have battery-based UPS, then it's critical to ensure that battery health is maintained," Simpson says, adding that an undetected battery failure or a battery that doesn't hold charge well can substantially reduce runtime for the UPS, which can give you a nasty surprise when you need 30 minutes to shut things down gracefully and you only get 15 minutes of runtime. "When you throw a generator into the mix, there's additional maintenance on such things as transfer switches, starter motors, and the like, while a failure in any of these can make the generator useless," Simpson continues.

Regular monitoring and maintenance can also go a long way to make sure that the backup systems can handle the load in the event of a power or cooling emergency to optimize availability and efficiency, says Ben Kissell, service solutions manager with Emerson Network Power's Liebert Services (www.liebert.com). "For example, if a UPS is operating over capacity, the critical load could be switched to bypass, exposing IT equipment to utility problems," Kissell says. "To proactively prevent those failures, data center managers can upgrade existing systems or implement new units to manage the appropriate capacity within the data center."



Top Tip: Do Dress Rehearsals

The backup cooling and power infrastructure may be in place in the event of an emergency, but does everyone know what to do when disaster strikes? Making sure that staffers know how to react requires clearly outlining and documenting the procedures. It also necessitates practice, such as staging mock emergencies to prepare. "The adrenaline starts to flow, people's judgment becomes impaired, and unless things are clearly marked and everything has been rehearsed and understood, there is a high probability that someone could hit the wrong switch or close the wrong valve, which could create further catastrophe," says Bill Kosik, energy and sustainability director for critical facilities services at HP. "You can have a pull-the-plug test where you simulate a power and cooling failure and everyone has to man their stations in terms of what has to be done, where, and when."

Upcoming IT Events

For more Upcoming IT Events, see page 3.

AFCOM Central Ohio

July 21
Columbus, Ohio
www.afcomcentralohio.org

ISSA Des Moines

July 26
3920 SW Camden Circle
Ankeny, Iowa
www.issa-desmoines.org

ISSA Inland Empire

July 27, 11:30 a.m.
Coco's Restaurant and Bakery
60 West Foothill Blvd.
Upland, Calif.
ie.issa.org

ISSA Baltimore

July 28, 4:30 p.m.
Sparta Inc.
7110 Samuel Morse Drive, Suite 200
Columbia, Md.
www.issa-balt.org

AITP California Southland

July 28
www.aitpcalsouthland.org

- AUGUST -

AFCOM Dallas/Fort Worth

Aug. 10
Dallas, Texas
www.dfwafcom.org

AFCOM St. Louis

"Gateway" Chapter
Aug. 10
Schneider Electric Technology Center
807 Corporate Centre Drive
O'Fallon, Mo.
www.afcom.com/afcomnew/stlouis.html

AITP Garden State

Aug. 10
Jim Johnston's Steakhouse
58 Eisenhower Parkway Mountain Plaza
Roseland, N.J.
tech.groups.yahoo.com/group/aitpgardenstatechapter

AITP Richmond

Aug. 10
2015 Staples Mill Road
Richmond, Va.
www.aitprich.org

PASS Wisconsin SQL Server User's Group

Aug. 10, 4:30
Microsoft Office
2176 Woodcrest Drive
Green Bay, Wis.
wisconsin.sqlpass.org

Greater Wheeling AITP

Aug. 11
Wheeling, W.Va.
www.aitp-wheeling.org

ISSA San Diego

Aug. 11
San Diego, Calif.
www.sdiissa.org

Southern New England SQL Server User's Group

Aug. 11
www.snessug.com

AITP Washington D.C.

Aug. 12, 6:30 p.m.
Alfio's Restaurant
4515 Willard Ave.
Chevy Chase, Md.
aitpwashdc.ning.com

ISSA Northeast Ohio

Aug. 12
Cuyahoga County Library-Parmal South
7335 Ridge Road
Parma, Ohio
www.neoissa.org

SQL Server Society of Las Vegas

Aug. 12
The Learning Center of Las Vegas
777 North Rainbow
Las Vegas, Nev.
ssolv.com

AITP Southwest Missouri

Aug. 17
Springfield, Mo.
aitpspringfield.org

Study Examines H-1B Holder Salaries

Contrary to the common belief that many foreign-born H-1B IT workers make less than their U.S.-born counterparts, a recent study by Drs. Hank Lucas and Sunil Mithas from the University of Maryland's Robert H. Smith School of Business found that H-1B holders actually tend to earn more.



Fundamental to the study was determining if skilled temporary foreign-born workers were used as a complement to or a substitute for U.S. workers; the study found the former to be true.

"We conjecture that U.S. companies pay a premium for non-U.S. or migrant IT professionals for at least three reasons: intangible human capital, rigorous screening and selection processes, and willingness to work across borders," Mithas says.

In other words, foreign-born IT workers are complementary to U.S. workers, and all things therefore being equal in terms of education and qualification, certain other factors affect the discrepancy in pay.

For example, foreign-born workers may bring value to organizations by virtue of their being from a different country—the "intangible human capital" Mithas spoke of—because they will likely possess knowledge of other global markets (and contacts therein). Further, their willingness to relocate to a different country demonstrates a willingness to travel and take risks.

Additionally, Lucas and Mithas assert that visa caps in the U.S. create a simple supply and demand for foreign IT workers and their value. If the visa holders are desirable workers, and only a certain number of H-1B visas can be issued, companies will have to compete to woo the best talent. Therefore, salaries for those workers will increase.

Effects On Economy Remain Unclear

Mithas points out, however, that this research can't be extrapolated to comment on how the above practices affect the U.S. economy nor on whether it takes away jobs from U.S. citizens; rather, it looks solely at the issue of wages for H-1B workers. "We did not study the effect of the H-1B visa program on the U.S. economy, so we cannot comment on that. We did not find any evidence that IT professionals on work visas are paid less compared to, say, U.S. citizens."

However, he notes, "We believe our study provides information that is useful for managers and policy-makers and hope that it will be useful in framing important discussions about immigration and visa policies."

by Seth Colaner

COVER FOCUS

Keep Your Power & Cooling Up & Running

Preventive Maintenance & Proper Planning Are Both Key To Staying Operational & Efficient

by Dan Heilman

NO COMPANY WANTS TO face the hassle and expense of replacing its data center—or even any of its components—until it absolutely has to. Yet, many companies are lax when it comes to performing the preventive maintenance that can buy months, even years, of reliable service from their equipment.

Here are some tips from industry experts on how to get the most mileage from your equipment, specifically from the standpoint of power and cooling.

Clear The Air

Air filters in your components are cheap and easily changed, but too many companies see them as an afterthought. That can lead to trouble later.

"We do recommend that customers regularly check the air filters—make sure they're not getting clogged or dirty and keeping the component from being cooled," says Henry Hu, service product manager for power and UPS products at Emerson Network Power in Columbus, Ohio (www.emerson.com). "That's something simple and proactive that they can do."

Dan Hyman, principal and co-founder of Custom Mechanical Systems ([www.cmscooling.com](http://www/cmscooling.com)), points out that the air filter pressure drop increases as the filters collect dirt and dust, meaning components need increased fan energy.

"Filters should be changed as soon as the pressure drop increases by half an inch over a clean filter," he says. "On a 30-ton CRAC (computer room air conditioner) unit, half an inch of additional pressure drop can equate to as much as 3hp (2.2kW) operating 24/7. A simple manometer gauge can be used to measure the pressure drop across the filter bank. It is important

that this measurement be made with the unit at full speed."

Hyman also recommends regularly adjusting and changing belts on air handlers and calibrating temperature and humidity sensors at least once a year.

Optimize & Simplify

Doing more with less and making the most of what you have can be key. For instance, make sure your hardware is racked and stacked in a standard manner, says Ashish Nadkarni,

practice lead at Glass-House Technologies.

"Make sure your floor space is most efficiently used," says Nadkarni. "Don't overcrowd your data center—[for example,] if you're not observing best practices from a power and cooling perspective, or leaving inadequate space for airflow, or not balancing your power requirements uniformly across the rack, or [if] cable runs are interfering with airflow systems."

Also, make sure your hardware is being used intelligently. If you're only using your assets to 20% of their physical capability, services such as server virtualization, storage, and backup recovery can help you get more out of them.

Finally, pay attention to what you do with outdated hardware, which can be a big source of inefficiency. Have a process in place to retire hardware as soon as its usable value is over.

"A lot of data centers have retired hardware sitting in a corner somewhere," says Nadkarni. "They might think it's harmless, but it might be interfering with the airflow or the cable runs. A data center is a living facility—every inch of floor space has to be used intelligently and efficiently. It's almost like maintaining your car—make sure every component is being used properly."

Watch The Humidity

ASHRAE frequently issues warnings about the dangers of too much humidity (which can lead to disk and tape drive corrosion) and too little humidity (which can cause electrostatic discharge damage to sensitive electronics), says Dave Ruede, vice president of marketing at Temperature@lert (www.temperaturealert.com).

"At increased relative humidity, attention will need to be paid to condensation on cold surfaces, particularly where surfaces have the potential to be cooled below the dew point and where the condensation can come into contact with electronic components," he says. "Balancing airflow to avoid excessive



cooling of electronic systems directly in the airflow path will need particular attention at the upper limit of the RH range."

Inexpensive temperature/humidity sensors can be a valuable addition to environmental monitoring systems. And remote monitoring services can keep a close eye on all kinds of

Key Points

- Preventive maintenance on your equipment—both before purchase and during its life span—can prevent headaches later on.
- Too much humidity can cause cooling issues, but so can too little.
- Problems with one component in your data center can lead to breakdowns throughout the system.

power and cooling metrics for when you don't have the time to baby-sit equipment.

Be Diligent & Plan Ahead

Keep thorough and up-to-date records documenting your daily walkthroughs of the outside plant, your hourly walkthroughs of the data center floor, and all maintenance visits, says Kris Domich, principal consultant for UK-based Dimension Data.

"Oftentimes by looking at historical data, trending it, and comparing it to current readings, it is easier to spot anomalies that may warrant further investigation," Domich says. "Always follow the manufacturer's recommended maintenance and overhaul cycles and have this work performed by someone certified to work on the specific model of equipment you have."

Adds Nadkarni: "When people talk about a power or cooling issue, it usually means a couple of things: Either you haven't planned properly, or you have an imbalance of power and cooling. Especially if you're doing a fresh build-out, the planning piece is important." **P**

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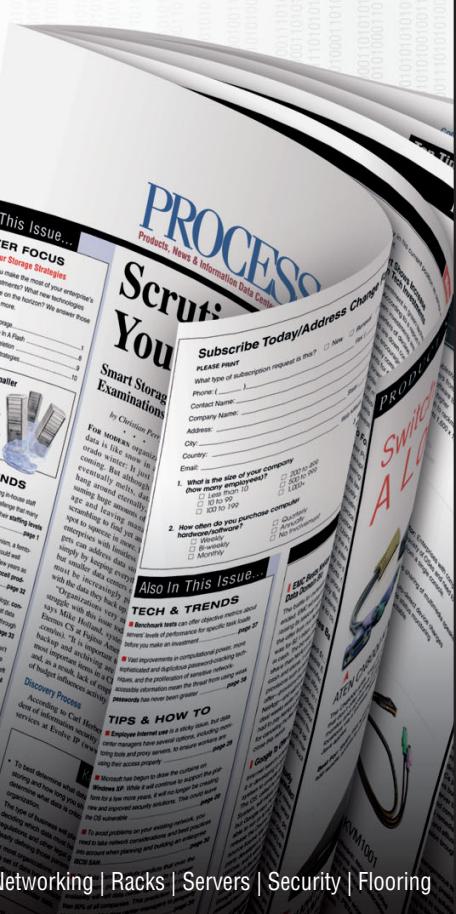
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by Blaine Flamig

PREMIUM POWER DISTRIBUTION without the premium price. Such a notion may sound too good to be true in today's sagging economy, but such an approach is precisely the customer-oriented mission PDUs Direct (www.pdusdirect.com) was built on and continues to operate by.

As the online wholesaler of basic, metered, and switched PDUs from long-time PDU maker Server Technology's product line, PDUs Direct is dedicated to providing its customers the highest quality in-rack power strips, power distribution, and rack PDUs offered at best-in-class prices.

Established in November 2008 at the outset of the economic downturn, PDUs Direct understands the financial, cost-cutting challenges now facing SMEs. That's why PDUs Direct is committed to supplying its customers with industry-standard, industrial-grade PDUs suitable for network and server environments at prices falling 10 to 20% below competitors' online prices. PDUs Direct's customer commitment extends

to the company's easy-to-use, uncluttered Web site, which makes locating the right PDU a quick, streamlined process without skimping on the pertinent product information customers require.

PDUs Direct's dedication to its customers is seen through its next-business day shipping policy; 100% satisfaction, 30-day money-back product guarantee; and ultra-convenient email and live chat technical support options. Whether the question or concern is in regard to a product, order, or application, PDUs Direct's chat support pairs customers with live operators who possess years of real-world PDU experience and knowledge. Customers can even request a chat transcript for reference following a chat session.

PDUs Direct power distribution units are constructed in steel-case enclosures, available in a variety of outlet and power-level configurations, and ship with a customer-selected power cord. Each switched PDU sold also includes the latest firmware from Server Technology and fully networked outlet management and power and environmental monitoring abilities. **P**

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SIMENA'S PACKET FLOW SWITCH PFS1524

NEW PRODUCT

by Andrew Leibman

Network Monitoring To The Microsecond

IF YOU NEED YOUR NETWORK to operate in real time, then you need a network monitoring solution that's cut out for the high-bandwidth and low-latency demands of microsecond networking. Simena's latest Packet Flow Switch supports 10GbE bandwidth and guaranteed execution for aggregating, duplicating, distributing, and filtering packets at wire speeds.

The PFS1524 is a 24-port, 1U-form factor network monitoring switch that is capable of the industry's lowest fixed latency for port-to-port packet forwarding: a fraction of a microsecond. This lets users monitor their network and applications down to the individual packet level and measure performance with the utmost accuracy.

The PFS1524 supports all types of SFP+ and SFP modules, which lets customers collect packets from multiple sources and forward them to other devices, regardless of individual wire speed. An intuitive Web-based interface lets users configure multiple switches and generate clusters for a virtual switch with 500 or more ports.

The PFS1524 is also capable of packet slicing, which lets users forward only the configurable portion of packets and, as a result, dramatically reduce the superfluous data that can bog down monitoring systems. Simena's port tagging feature



Simena Packet Flow Switch PFS1524

An ultra-low-latency monitoring switch that supports advanced applications, including tool aggregation and traffic consolidating and dividing.

enables the monitoring system to identify and source each packet by marking packets with the physical port IDs upon receipt. Another useful feature is the PFS1524's ability to support user-generated internal network taps, which lets users directly connect production systems to the switch for packet duplication and aggregation. In effect, users can spare valuable SPAN ports and forego using external taps.

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News

■ Data Shows 75% Of Households Visit Social Networking Sites

More than two-thirds of global consumers use the Web to research products before making a purchase, including reading reviews and finding recommendations from community and social media sites. That's according to new statistics regarding social media and online consumer behavior from Nielsen. The Consumer Confidence Survey Q1 2010 also shows that 75% of actively Web-connected households visit social networking sites, while 55% of U.S. adults have at least one social network account. In the United States, social networking sites have 148.2 million unique visitors, and the average worker spends 5.5 hours per month visiting sites while at work. Facebook accounts for the majority of that time.

■ Dell Will Delay 10-Q Filing

International computer maker Dell has delayed the filing of its 10-Q form because of accounting errors. The delay is linked to the U.S. Securities and Exchange Commission's investigation of Dell's financial practices. Although the 10-Q form was due June 16, Dell informed the SEC that it would set aside \$100 million to cover the anticipated settlement of the SEC's investigation. The U.S. attorney's office has also subpoenaed critical documents associated with eight years of Dell's accounting records. Dell is currently working with an audit committee and its independent auditors to assess any restatements.



■ House Oversight Committee Probes Federal Cloud Computing

The House Committee on Oversight and Government Reform is investigating the government's cloud computing practices. Committee Chairman Edolphus Towns and Diane Watson, subcommittee chairwoman, sent a letter to the General Services Administration raising concerns and questions regarding the government's move to cloud computing. Federal CIO Vivek Kundra is driving the shift to cloud computing, and the GSA released the Cloud Computing Initiative Vision and Strategy Document to finalize government plans for cloud computing.

■ Cell Phone Radiation Law Set In San Francisco

The city of San Francisco may soon be the first city requiring cell phone retailers to post the amount of radiation a phone emits next to the product itself. The proposed law was passed by the city board and is expected to be signed into law soon. As of February 2011, most retailers will be required to post the information. Opponents of the bill argue that the Federal Communications Commission already has compliance regulations for cell phone RF emissions, so posting such information about devices that already meet federal standards is unnecessary and misleading.

COVER FOCUS

Power & Cooling Tech To The Rescue

Upcoming Technologies & Trends Are Set To Stave Off Rising Heat & Growing Power Demands



by Christian Perry

LIKE AN INVISIBLE AVALANCHE, power consumption and heat continue to tumble down upon hapless IT managers as increasingly demanding technologies take data center environments to their limits. But on the horizon is a group of innovative saviors that could prevent these menaces from wreaking their seemingly endless havoc.

"Data center managers can expect to see continuing improvement over a wide range of products and concepts that will help meet the increasing power and cooling challenges," says Steve Susina, director of marketing for Laurus Technologies (www.laurustech.com). "The easy gains from more efficient air conditioning units or equipment arrangement into hot/cold aisles have been attained. And users will continue to demand more from their systems—the growth of data will continue; IT will become more strategic across a range of business functions; and the demand for servers, storage, and networking will continue to grow."

That rise in demand will spark a move toward power and cooling technologies and strategies that venture outside of the norm, especially as managers find that standard solutions won't always keep up. The good news is that plenty of new approaches are available, and others are on the way.

Free-Air Cooling

Although free-air cooling is already making its presence known in today's data centers, experts predict its use will increase in the future. According to Chris Loeffler, program manager for Eaton's distributed power solutions (powerquality.eaton.com), data centers implement this technique by treating the cabinets and enclosures as air paths, pulling in cooler external air to filter

through the data center. In turn, waste heat generated by servers and other IT equipment is pushed out of the building or leveraged elsewhere (for example, to support the building's heating system or to heat water). Such "recycling" of hot air is growing in use, especially in Europe, which Loeffler notes is leading the charge in finding new ways to use waste heat.

"Free-air cooling is fairly easy to implement, even for mechanical infrastructure like UPSes and new types of power distribution," Loeffler says. "Combined buildings and employee-use buildings will be able to use the recycling techniques more efficiently. The heat by-product of free-air cooling is not likely to be used to generate electrical power—but you never know."

Better Metrics

Keeping track of your power consumption is a no-brainer for keeping your data center's bottom line under control, but the wide breadth of technologies and equipment populating the average space today makes monitoring easier said than done. However, new metrics are on the way that go beyond PUE (power usage effectiveness) and DCiE (data center infrastructure efficiency) for measuring power consumption.

"We expect that these metrics and recommended procedures will become more integrated into data center tools so that data center managers will not need to gather information from disparate sources and do their own calculations or look up recommended procedures. The information will be presented directly in a useable form," says Greg More, senior product marketing manager for Raritan Power Management Solutions Group (www.raritan.com).

Carbon reporting will rise in importance, especially if cap and trade becomes more prevalent, More adds. As organizations try to minimize their carbon footprints, data centers will need to play a part in that role, particularly when data centers represent integral parts of the business, such as in online trading, software development labs, and hosted IT services.

Complete Virtualization

Virtualization is by no means a new concept to most data center managers, but the technology is often used only partially in many environments. But Scott DesBles, director of technical solutions for Compellent (www.compellent.com), predicts a rise in complete data center virtualization, in which combined storage and server virtualization will reduce hardware requirements, improve utilization, shrink the data center footprint, and ultimately reduce power and cooling needs.

"Completely virtualized data centers provide IT departments with the flexibility of a fluid pool of server and storage resources that can be used for any application," DesBles explains, adding that data centers that don't virtualize may need to add physical machines and disk drives to their infrastructures to handle increased IT needs. "By

Key Points

- Free-air cooling will become more popular as data centers look to recycle waste heat for use in heating systems or to heat water.
- Keeping track of energy consumption is more of a challenge than ever, but upcoming metrics will be more tightly integrated with data center tools to make tracking more efficient.
- Virtualization is already in play in many data centers, but future end-to-end virtualization strategies will help data centers cut both power consumption and cooling needs.

giving organizations the ability to maximize existing resources, virtualization reduces the need to constantly add physical hardware and therefore increase power and cooling needs along with the data center footprints."

Laurus' Susina adds that server virtualization is well into the adoption curve, giving data center managers the knowledge that fewer servers means reduced cooling environments. But next up on the adoption plate is virtual desktop infrastructure, which is more complex and less mature than server virtualization. Still, Susina expects increased adoption in the future. **P**

Top New Tech: Liquid Cooling

Water and other liquids weren't always considered options in data centers, but today they're more welcome as organizations recognize their cooling benefits. In the near future, liquid-immersed technology will be more prevalent in data centers, and Chris Loeffler, program manager for Eaton's distributed power solutions (powerquality.eaton.com), suggests thinking of the concept as a circulatory system for the data center.

"Picture everything in a gelled liquid, like your blood system. Just as your brain is cooled by your blood, processors operate within a liquid, or

liquid cooling will be in the server itself," he says. "The implementation is in the hands of the server manufacturers, which will have to build boxes that can be hooked up into a 'circulatory system.'"

Although this concept is already oozing its way into data centers, Loeffler predicts it will pick up more steam on the adoption front. New data center builds will enjoy easy implementations, but the process will be significantly more complex when retrofitting existing data centers. However, the process would be similar to installing in-row or overhead cooling systems in existing data centers, he says.



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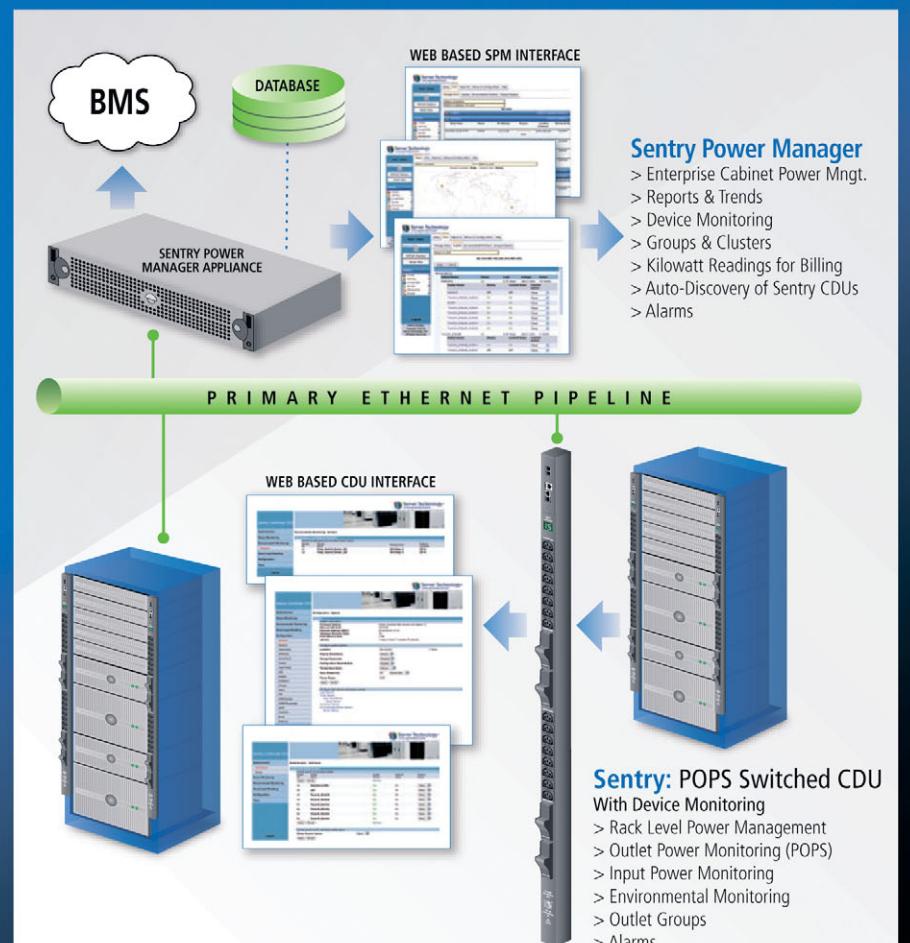
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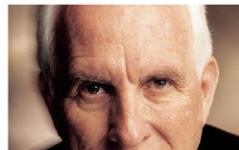
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Specialty Server Racks &

Product	Black Box ClimateCab NEMA 12 Cabinets	Black Box ClimateCab NEMA 12 Wallmount Cabinets	CableOrganizer Great Lakes WE Server Side Wall Mount Enclosure
Description	<p>Black Box's ClimateCab enclosures offer climate-controlled protection that lets you install servers without the need for additional cooling or costly infrastructure. These full-sized cabinets come configured for servers or datacom equipment and feature a welded 12-gauge steel frame with integral struts.</p> <ul style="list-style-type: none"> • Rated for protection against falling dirt; circulating dust, lint, and debris; and dripping or splashing liquids in indoor environments • Full-sized cabinet with 42U of racking space • Available with 12-24 or M6 rails • Choose from models with 6,000BTU or 8,500BTU air-conditioning units • 40-inch depth accommodates most servers <p>Best For: Housing servers in remote locations without cooling infrastructure.</p> <p>Price: \$4,499.95 to \$5,499.95</p>	<p>ClimateCab NEMA 12 Wallmount Cabinets from Black Box are the answer when you need to install a small amount of rackmount equipment in less-than-ideal conditions. These secure cabinets provide a compact way to protect and cool sensitive components.</p> <ul style="list-style-type: none"> • NEMA 12 rated for protection against falling dirt; circulating dust, lint, and debris; and dripping or splashing liquids in indoor environments • Compact wallmount design saves space • Single- or double-hinged • Choose from a cabinet with a fan or an 800BTU air-conditioning unit <p>Best For: Equipment protection in hot, dirty environments such as factory floors.</p> <p>Price: \$999.95 to \$2,795.95</p>	<p>Perfect for server rooms that are short on floor space, this revolutionary WE Server Side Wall Mount Enclosure is designed to mount servers weighing up to 350 pounds sideways on the wall, leaving your floor clear and achieving the lowest-profile projection possible. Locking mesh side doors provide excellent breathability for hot-running servers and allow both front and rear access to equipment for easy setup and maintenance.</p> <ul style="list-style-type: none"> • 10 RMU with 34 inches of usable depth • 1-, 2-, and 3-inch cable management knockouts in the front, bottom, and rear of the enclosure • Optional ventilation fan available • M6 cage nuts and rack screws included • Weight capacity of 350 pounds • UL listed in the United States and Canada • Made in the United States <p>Best For: Wall-mounting telecom equipment wherever space is at a premium.</p> <p>Price: Starts at \$754.80</p>
Contact	(724) 746-5500 www.blackbox.com	(724) 746-5500 www.blackbox.com	(866) 222-0030 www.cableorganizer.com

Product	NER Data Products Zone 4 Seismic Cabinet	Polargy PolarRack XG	Rackmount Solutions Air Conditioned Server Cabinet
Description	<p>The Zone 4 Seismic Cabinet has been fully NEBS tested and certified to meet the GR-63-CORE standard for seismic zone 4. The cabinet features heavy-duty 12-gauge steel construction with reinforced weld locations. Removable mesh front and rear doors attach with four bullet-pin hinges, compared to two hinges in current non-zone-4 designs.</p> <ul style="list-style-type: none"> • Features an open frame design with side panel options • Top panel is integrated into the frame • Rackmount rails are depth-adjustable and bolt securely into welded channels along the base of the cabinet • Features a powder-coat finish <p>Best For: Sensitive equipment for data centers located in seismic zones.</p> <p>Price: \$3,100</p>	<p>The PolarRack XG from Polargy helps capture the benefits of hot aisle and cold aisle containment. The XG ensures that hot and cold air don't mix through the rack, that cold air gets easily to the server intakes, and that exhaust air exits freely.</p> <ul style="list-style-type: none"> • Sealed to prevent recirculation and bypass air • Ensures air passes freely to equipment • Keeps exhaust areas clear • Pre-provisioned for containment systems <p>Best For: Sites deploying hot-aisle and cold-aisle containment systems.</p> <p>Price: Starts at \$925</p>	<p>Rackmount Solutions' Air Conditioned Server Cabinets have built-in AC units with 4k, 7k, 10k, or 20k BTUs to protect equipment in warm or dirty environments. Units are available from 14 to 48U, with depths from 24 to 42 inches.</p> <ul style="list-style-type: none"> • Compatible with all leading servers, including blade servers • Protects expensive equipment from overheating • No cooling water; units work like a refrigerator with a condensate pan • Can be paired with a rackmount or side-mount A/C for more space <p>Best For: Data centers and standalone applications with heat problems.</p> <p>Price: Starts at \$5,633</p>
Contact	(888) 637-3282 www.nerdata.com	(888) 816-8338 www.polargy.com	(866) 207-6631 www.rackmountsolutions.net

Processor's Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

by Kris Glaser Brambila

Cabinets

GizMac XRackPro2 25U Noise Reduction Rack



The XRackPro2 25U computer rack enclosure from GizMac Accessories is an industry-standard 19-inch (48.2cm) wide four-post rack designed to reduce server noise and increase air filtration and circulation. Key-locking doors make the unit secure yet accessible, and heavy-duty castor wheels add mobility. With up to 32 inches (81.2cm) of maximum internal equipment mounting depth, the versatile XRackPro2 can accommodate the varying depths of your equipment by utilizing the adjustable mounting posts.

- Reduces noise up to 80%
- Air filtration provides an optimal operating environment necessary to keep your equipment up and running
- Specifically designed for optimal airflow, moving the hot air out and the cool air in
- Key-locking front and rear doors add an extra level of security
- Removable side panels for added access

Best For: Environments seeking or requiring reduced noise or ones that would benefit from air filtration and optimized air circulation.

Price: Starts at \$2,499.99

(800) 475-1677
www.xrackpro.com

Hergo 12U S-Rack



This 12U/36-inch enclosure cabinet features a unique channel shock-mount assembly for the maximum level of equipment protection in seismic-prone environments.

- Four 11 GA square cage knock-out mounting rails
- Top fan assembly with four 75 CFM fans
- Locking front and rear doors with knock-outs for additional fans
- Perforated removable side panels with 12 x 24 filters
- Options include 24- and 27-inch fixed or slide-out shelving, 6-port RM power strip, and 1U cable loop panel

Best For: Housing network equipment under conditions of shock and vibration.

(888) 222-7270
www.hergo.com

NER Data Products Wall-Mount Enclosures



The hinged wall-mounting back assembly featured on NER Data's Wall-Mount Enclosures is designed to accept a range of cables so the Wall-Mount Enclosure can be used in almost any location.

- Made of 16-gauge cold-rolled steel to support heavier loads
- Door options include 19-inch rackmount rails, knock-outs for fans, and multiple key-hole mounting locations
- Available in 18- and 24-inch depths; 12U and 18U heights

Best For: Environments where a reduced amount of panel height and internal depth is required.

Price: Starts at \$525

Rackmount Solutions Network Cable Bundle Server Rack



Need to secure a rack with a serious number of cables? Rackmount Solutions' Network Cable Bundle Server Rack solves all problems. With a roomy interior up to 28 inches, you can set your rails to 19 or 23 inches and slide left, right, or center to allow for your cabling needs. Rails slide front to back and side to side for maximum flexibility. The unit is available as an open rack or with doors, side panels, and tops for security/aesthetics.

- Compatible with all leading servers, including blade servers
- Allows up to 10 inches of cabling space between side panel and rail
- Use as an open rack or add security with locking side panels and doors

Best For: Data centers and standalone applications needing to integrate quantities of cable drops.

Price: Starts at \$1,115

(866) 207-6631
www.rackmountsolutions.net

Rackmount Solutions Soundproof Server Rack



Soundproof Server Racks from Rackmount Solutions reduce external sound up to 28.5dBA while dispersing internal heat loads up to 7kW. Built-in casters make it easy to move these servers to another area when the need arises. The Soundproof Server Racks are available in active and passive versions and in 12U, 24U, and 42U sizes.

- Compatible with all leading servers, including blade servers
- Increases productivity, as employees are able to concentrate and better communicate
- Cuts down on workman's comp claims and OSHA problems because of excessive noise

Best For: Data centers and standalone applications needing to reduce noise in the work environment.

Price: Starts at \$4,149

(866) 207-6631
www.rackmountsolutions.net

Wright Line NEBS Zone 4 Enclosure



Wright Line's NEBS Zone 4 Enclosure, part of its Paramount enclosure family, provides additional protection for rackmount servers and network equipment in seismically active regions. The Wright Line enclosure demonstrated no deformations to the frame or any load-bearing element when tested by an independent facility using Bellcore GR-63-CORE seismic requirements for up to 1,000 pounds. It is offered in 24- and 30-inch widths, 34.5- and 40-inch depths, and 77- and 84-inch heights, which feature 38U and 42U usable vertical space, respectively.

- Constructed of 12-gauge steel
- Features a rugged internal cross member frame that provides additional structural integrity
- Includes seismic mounting washers to be used in conjunction with approved anchoring methods for concrete slab or raised tile computer floors
- Carries a limited lifetime warranty

Best For: Data centers and any other mission-critical environment located in a seismic zone that cannot afford network downtime after an earthquake.

Price: Starts at \$3,000

(800) 225-7348
www.seismicenclosure.com

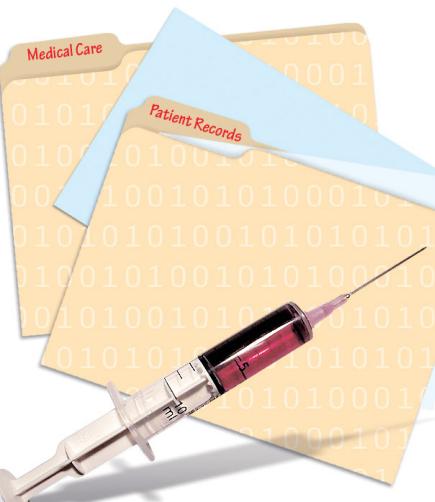
Study Shows Healthcare Data Still Leaked Over P2P Networks

Sensitive patient information is increasingly being leaked over P2P networks by employees in the health field and their business partners, resulting in hundreds of compromised records. Evidence of this situation was revealed recently in a talk given by M. Eric Johnson of Dartmouth College's Tuck School of Business at the IEEE Symposium on Security and Privacy.

Johnson and his colleagues studied thousands of files that had been unintentionally disclosed over P2P networks such as LimeWire, eDonkey, and BearShare. In spite of the passage of HIPAA legislation five years ago and the HITECH (Health Information Technology for Economic and Clinical Health) Act just last year that promoted the adoption of electronic health records (generally considered to be a secure storage mechanism), healthcare records are still being disclosed over P2P networks. Increasingly, the study found, employees are putting this information into Word documents and spreadsheets, which are much less secure than EHRs. The results of the leaks are embarrassment, fraud, and medical identity theft for the companies involved.

Leak Sources

The study found leaks coming from a number of sources, including acute-care hospitals; doctors groups; medical labs; insurance carriers; and even outsourced providers such as billing, collection, and transcription firms. Documents found by Johnson and his colleagues included correspondence, business documents, and spreadsheets with personal health information. Healthcare firms were found to be leaking employee and patient



information for thousands of individuals. Information included addresses, Social Security numbers, birth dates, and treatment information. Private patient information revealing medical diagnoses and psychiatric evaluations was also found. User-generated searches were turning up confidential medical data, and it was evident that some of these searches were being done for malicious purposes.

Asked what the enterprises could do to better protect healthcare data, Johnson suggests disk-level encryption, tokenization, data truncation, and P2P monitoring. He also urges enterprises to invest in systems with good security. Keeping information out of spreadsheets and Word documents, he says, will also help. By "moving sensitive information out of ad-hoc databases such as spreadsheets and documents and into enterprise-class software," he says, we can "reduce the types of inadvertent disclosure we observed."

by Patrick Kean

FEATURED PRODUCT

Better Airflow, Smarter Cable Management

AFCO Systems' High Density Switch Cabinet Improves Cooling Efficiency Within Your Data Center

by John Brandon

• • •

WITH TECHNOLOGY constantly changing, data center and IT managers are looking for any way possible to make sure the products they buy today will meet their

Active Airflow Management

The HDS' design specifically targets airflow through the enclosure directly to the intake of the network switch where it is most needed. Consoli says that



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needs well into the future. AFCO Systems, which makes environmentally friendly data center cabinets, realizes this desire. Its new HDS (High Density Switch) cabinet is so cutting-edge and innovative that it works well with switches from leading manufacturers and is designed to be future-proof.

"Most network switches wreak havoc in a data center, generating heat loads of 1,500kW for each switch," says John Consoli, CTO at AFCO Systems (www.afcosystems.com). "That is a major power and cooling challenge right there. Add to that the network switch cables running into the unit, problems hot-swapping parts because of how the cabinet is positioned, and worry about exhaust out the back of the system. This is the industry's first active airflow management network switch enclosure."

Consoli says the HDS solves problems related to cooling and cable management with cabinets designed for the popular Cisco 6509 network switch. The product has several advantages for any company, including an airflow management module, a sidecar compartment for storing cables, and a resource management tool that can help admins monitor the cabinet remotely and check airflow, pressure, and heat build-up for components inside.

High Density Switch Cabinet Features

- Active airflow means air targets actual equipment
- Fiber and copper cables can be positioned vertically in a sidecar
- Cable stack spools can be added for extra cable management
- Hinged doors provide easier access to cables in the rack

although other products might direct airflow, the airflow is not managed properly and the air is not delivered directly to the heat load. Consoli says the company has seen over and over again how a nagging heat problem in a data center was solved using better-directed airflow that is managed properly using the HDS product.

The alternative to this kind of directed airflow is to focus on the data center itself instead of the enclosure, which Consoli says is a common approach but one that often does not actually work for most SMEs.

Interestingly, Consoli explains that directed airflow is actually more of a requirement in a smaller data center than it is in a large data center, where you might think airflow is a more critical issue; in fact, the smaller space makes it harder to direct the air and manage airflow. Consoli says there is also less tolerance in a small company for wasted airflow because of IT budgets in managing those systems, whereas a larger company might be more accepting of poor airflow dynamics.

Even if a company has a single rack of servers, Consoli says, it is even more critical to consider a rack with active airflow management because that one system can be managed more accurately and with less waste.

Airflow Advantages

A key differentiator to the HDS is that because airflow is passed from front to back correctly, the HDS is only 30 inches wide instead of the more common 36-inch width (or greater) of other units.

"AFCO uses advanced tools like CFD modeling and has conducted thousands of hours of testing to solve airflow problems at the cabinet level," says Consoli. "Our HDS solution uses directional airflow dampers and baffles, along with a sensor network that drives highly

efficient variable-speed fans to regulate and control airflow based on the needs of each cabinet."

He continues, "Admins can remotely monitor power, temperature, and—with an optional asset management add-on—can even keep track of their equipment. They can control airflow temperature thresholds, power thresholds, and cabinet access controls."

For smaller companies, network switches are becoming more common with the move to VoIP networking, which requires a labyrinth of cables and more complex management tasks. Consoli says the HDS is ideal for an SME with smaller data centers and server rooms because the SME does not have to juggle equipment around to make room for the cabinet, which is a more standard size that works better in a data center that is already standardized.

"Space savings is important for SMEs, but so is economy and efficiency," says Consoli, who explains that the HDS is easy to install in an existing data center because managers will likely not have to redesign the airflow requirements or move equipment around, and yet they gain the benefits of a more efficient enclosure for the network switch equipment.

"HDS works well in existing data centers because it does not require any additional infrastructure changes," Consoli says. "The system is self-contained, so it is not affected by surrounding cabinets or equipment. We have seen the installation of HDS cabinets improve the overall environmental conditions of an existing data center."

Other SME Benefits & Competition

Consoli says another benefit for SMEs is that the AFCO HDS cabinet is designed to be future-proof. He says the company

AFCO SYSTEMS HIGH DENSITY SWITCH CABINET

(800) 473-5422
www.afcosystems.com

Description: High-density switch cabinet designed to work with existing and future network switches with minimal cooling impact in a data center.

Interesting Fact: AFCO offers an optional add-on for the HDS cabinet that allows managers to track the cabinet as an asset using remote access management tools.

worked with network manufacturers to make sure the design matches the plans for upcoming network switches that might work with different inlet temperature and pressures to control cooling variables so that the HDS is adaptable to any changes to network switch equipment.

"Several clients have been running AFCO enclosures including our HDS model for six or more technology refresh cycles," says Consoli. "The design is totally adaptive and scalable. It can be configured in the field as needed to accommodate hardware upgrades."

Interestingly, because of how the product is designed—especially in terms of the unique airflow design and monitoring capability—and how it fits in an existing data center, Consoli says there are not really any competing products. Other offerings on the market have passive cooling or aren't designed to work with certain network switches. **P**

Environmental Monitoring Buying Guide

What Options Are Available & Which Are Best For SMEs?

by William Van Winkle

IF ONLY TO HELP ensure operational uptime, environmental monitoring of factors such as airflow, temperature, humidity, and wetness are increasingly prevalent in data centers. As data centers increase in size, so does the value of environmental monitoring. But as with any other technology, some ways of going about buying environmental monitoring are better than others.

Narrowing The Field

Before anything, managers need to understand what monitoring options are available. Until two or three years ago, wired sensors were standard issue. Unfortunately, this entailed so much plugging and running of cable that many businesses would only deploy a handful of sensors. Meanwhile, ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers) specifies six temperature sensors on each rack—top, middle, and bottom, both front and back. According to Mark Harris, vice president of product management at Modius (www.modius.com), many enterprises feel that although ASHRAE is too strict, only having a few sensors is too risky. A happy medium is best.

Fortunately, the broad range of wireless sensors on today's market makes right-sizing a monitoring deployment much easier. Harris states that modern wireless sensors small enough to fit in one's palm are just as dependable as wired alternatives.

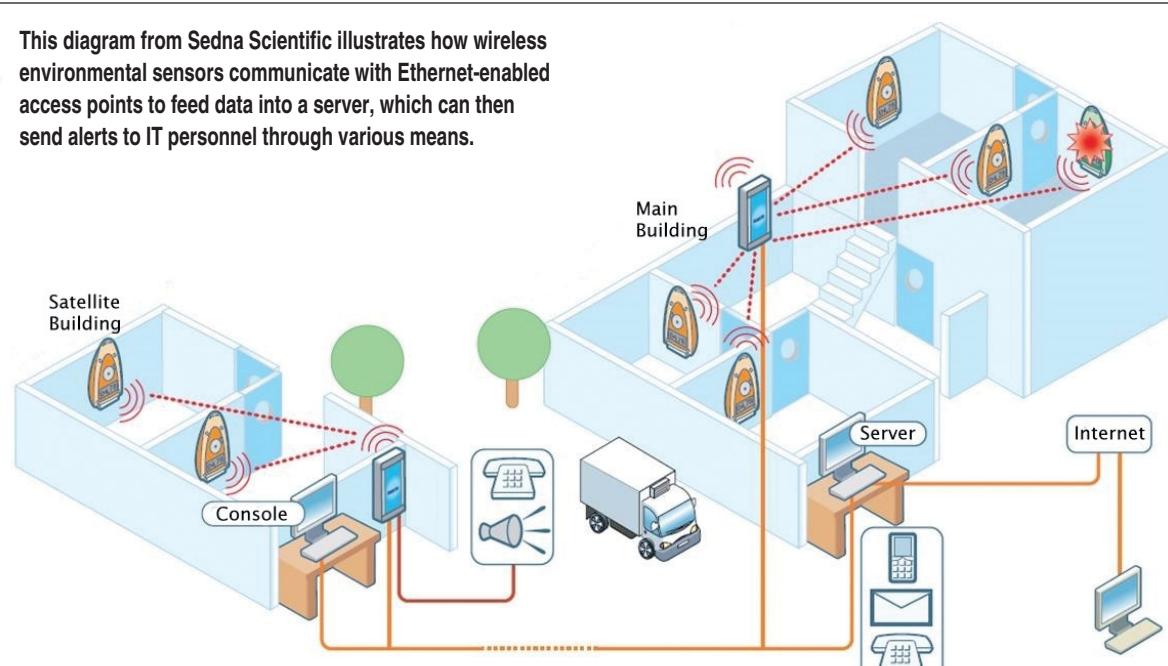
Key Points

- The move to wireless sensors cannot only improve security but also allow data centers to achieve a more appropriate sensor count compared to prior times with wired equipment.
- Environmental monitoring may only be part of the real picture. When weighing new solutions, keep an eye on those that can scale to include other areas, such as power consumption.
- Effective monitoring vendors should be able to help managers distinguish objective needs and display experience with integrating their solutions with any existing equipment.

Next, managers must decide if and how tightly various monitoring products should be integrated, both with one another and with the enterprise network. After all, there will be less of a need to make sensor data available to IT staff if the monitoring will be outsourced to a services provider. Standalone sensors may be fine for smaller businesses with fewer feature needs, but larger organizations will likely find their product choices determined in part by features that will help IT be accountable for its systems.

Dave Ruede, vice president of sales at Temperature@lert (www.temperaturealert.com), notes that data centers have two tasks: keep running and keep data secure.

This diagram from Sedna Scientific illustrates how wireless environmental sensors communicate with Ethernet-enabled access points to feed data into a server, which can then send alerts to IT personnel through various means.



Managers need to decide how much monitoring will play into supporting these two functions. In the former task, environmental monitoring can watch for such factors as power fluctuations or outages, vibration, smoke or fire, water leaks, or temperature excursions due to AC or chilled water system failures. These are the usual suspects with environmental monitoring, but a similar array of options also pertain to security.

"When working to keep data secure," Ruede says, "sensors include some of those included in the 'keep running' category. But additional sensors may be added for intrusion—like proximity, motion, door open sensors—sound, light, and in some cases, video recording. The rule of thumb is more data requires more sensors, bandwidth, etc., with video requirements adding significantly to the bandwidth and memory requirements."

Ruede adds that managers shouldn't forget to account for personnel, whether internal or contracted, to respond appropriately to all possible alarm conditions.

Entering The Spend

Buying environmental monitoring equipment is like buying life insurance. Buy too little and the worst case scenario could be catastrophic for everyone. Buying too much means throwing good money away for no reason. The monitoring must be commensurate with the value of what's being protected.

According to Temperature@lert's Ruede, a simple USB-based solution with temperature sensors and monitoring software can be had for about \$100. "Rackmounted enterprise-based monitors complete with Wi-Fi and hardwired sensor interfaces can cost several hundred to a few thousand dollars, and sensors would be extra," he says, and that's before any video monitoring and installation. Sensors that can signal out via cellular are more costly at a few hundred dollars, but they have the security advantage of not being dependent on a local network.

Modius' Harris points out that with environmental monitoring, one thing often leads to another. Data from a set of sensors breeds questions about other data center equipment, particularly about power. In

smaller operations, this means power strips and UPS statuses, but bigger organizations will also want to monitor PDUs, CRAC units, and generators.

"Because monitoring is so easy to do these days," Harris says, "you don't want to be in a position where you say 'If only I had looked at outside air temperatures, as well, I could have weighed this other set of business analytics against the data I have.' Monitor the things that you can see as likely being part of your decision processes: temperature, power, backup power, cooling, server loads. But don't kill yourself. At some point, a diminishing returns curve kicks in."

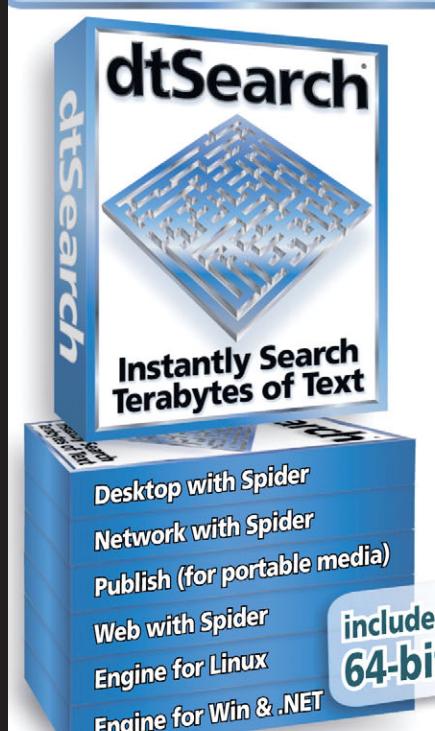
Vendors & Choices

Any environmental monitoring purchase involves compromise based on hard choices. Often, an outside set of eyes from an expert vendor can help in making objective decisions, and the first thing a vendor should help managers determine is their needs vs. their wants. The answer to this is often enough to indicate if a responsible vendor with the customer's interests foremost in mind is on the case.

Ruede recommends assessing vendors in part on their ability to provide a turnkey solution. If an end-to-end solution isn't needed, can the vendors answer questions about integrating with existing equipment? Do the vendors offer monitoring services, and which providers do they have listed as key partners?

"Ultimately," Ruede says, "the choice will come down to, 'Whom do I trust to really understand my needs, help do this right, bring it in at or under budget, and be there in the future when I need help?'" □

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Net Neutrality Group Formed

It's called the Broadband Internet Technical Advisory Group, or TAG, and its goal is to bring together engineers and technical experts to create a consensus on broadband network management practices. In particular, TAG will work on educating U.S. policy creators about technical issues to reduce the number of policy disputes. The group intends to work with federal agencies such as the Federal Communications Commission, the Federal Trade Commission, and the Department of Justice. Member companies include AT&T, Comcast, DISH Network, Google, and Intel. TAG also hopes to include people from universities, nonprofits, and Internet user communities.

Legal Battle Between Novell & SCO May Be Over

A ruling from U.S. District Court Judge Ted Stewart finding in the favor of Novell may bring an end to a seven-year legal battle between Novell and SCO over ownership of copyrights to Unix software. The litigation began in 2003, when SCO sued Novell for allegedly interfering with SCO's rights to Unix, which SCO had purchased from Novell in 1995; for its part, Novell has remained firm in its claim that the sale of Unix to SCO did not include the copyrights in question. The latest ruling upholds previous rulings against SCO; however, SCO could choose to continue the battle by filing with the 10th U.S. Circuit Court of Appeals.

IBM To Venture Into Web Analytics With Coremetrics Buy

Tech giant IBM announced its plans to acquire Coremetrics, a maker of software and services for business analytics. The move is intended to give IBM an entry point into the Web analytics arena by leveraging Coremetrics' expertise in analytics for marketing optimization, social media, and cross-channel retail sales tracking. IBM says the integration will help it better track consumer interactions and expand its business analytics offerings. Coremetrics employs about 230 people, which IBM says it will integrate into its current workforce. The deal should close in the third quarter; no financial details were disclosed.

**New Cybersecurity Bill Proposed**

A cybersecurity bill was introduced in the Senate that would allow the president to disable access to critical networks in the event of a security breach. Banks and telecommunications and transportation services are included in the critical infrastructure this bill aims to protect from cyber threats. The Protecting Cyberspace as a National Asset Act of 2010 is one of many cybersecurity bills proposed in the Senate. If passed, a National Center for Cybersecurity would be installed in the Department of Homeland Security as well as an Office of Cyberspace Policy. Although cybersecurity is a top issue for the Obama administration, it has yet to voice its endorsement.

A Look At Data Center Infrastructure Management Software & Its Impact

The Benefits Of Automation Software That Can Manage DC Power, Cooling & Physical Infrastructure

by Kurt Marko

• • •

THE CLOUD MAY BE the eventual home of enterprise IT infrastructure, but for now, the data center is still arguably IT's most important (and undeniably most expensive) asset. Yet data center operations often suffer from organizational schizophrenia. IT has clear responsibility for the network, server, and

platform covering the physical data center layout (racks and cabinets) and associated cooling, electrical, and cable infrastructure. He says DCIM software provides four key features: asset management, equipment monitoring, analytics and reporting, and workflow integration.

Much like CMDBs (configuration management databases) are used to record the setup of applications, operating systems, and server hardware, Schreck says DCIM asset databases hold the specifications, configurations, and locations of all physical assets in a data center. The database includes specifics such as an item's model number, physical rack location, average power consumption, and the electrical circuits and network ports it's connected to, all organized in a hierarchical structure that enables summary reports at the cabinet, aisle, or room level. Many DCIM products also include visualization features that can display assets on a floor plan, map, or cabinet-level schematic elevation. Although not designed to replace a full-fledged enterprise asset management system, DCIM tools provide features that are good enough for most SMEs, according to Mike Tresh, director of product management at Viridity Software (www.viridity.com).

DCIM software also tracks the power consumption of every device over time, and some add the ability to correlate energy use with actual server activity. Schreck says DCIM systems act like a data center smart meter. The ability to perform a what-if analysis on power usage data is another feature common in DCIM packages. For example, Schreck says some products use algorithms that can extrapolate usage trends to identify a pending overcapacity problem or correlate power draw with a physical location to identify potential hot spots or overloaded circuits. Although Laliberte says such analytics are no substitute for a detailed CFD simulation, he and Schreck agree they're adequate for identifying the optimal placement of new equipment or improving rack utilization in an overcrowded data center.

Automating IT processes associated with physical asset installation, such as provisioning or decommissioning systems, is another typical DCIM feature. Many DCIM tools integrate with existing trouble ticketing and task management systems to structure workflows and coordinate activities between IT and facilities.

Evaluation Criteria

Although DCIM functionality originated with high-end software specializing in large-scale facilities management, a slew of purpose-built DCIM products have recently emerged from small specialty firms, according to Schreck. He sees market consolidation on the horizon as these are swallowed by the dominant IT systems management vendors. Thus, he advises DCIM buyers to look for those companies that have forged

strong links with the leading enterprise IT management vendors.

The maturing of the DCIM market means there are products suitable for even small enterprises, although Schreck admits it's not for someone with 10 racks, but more like dozens of racks and a hundred or more servers. Flesh agrees and says about 5,000-square-foot facilities is where the tipping point takes place, which translates to about 2,000 managed assets.

Futures & Recommendations

DCIM can deliver short-term benefits by improving space utilization, equipment placement, capacity planning, and cooling and power efficiency. However, Schreck sees an even greater impact in the long term. As enterprises make their infrastructure more cloud-like through virtualization, he says workloads will become much more dynamic. In this environment, Schreck says DCIM could form the foundation for a sophisticated energy management solution, something like a smart grid for data centers in which virtualization management software automatically shifts workloads to base load systems during times of low demand while DCIM software puts unused resources into a low-power standby state. As the workload increases, integration between VM management software and DCIM could optimize placement of new VMs on servers to balance the cooling and power load throughout the room, avoiding the creation of hot spots or unstable electrical circuits. □

Features To Look For In DCIM Tools

According to "Put DCIM Into Your Automation Plans: Data Center Infrastructure Management Should Be A Part Of Your Architecture," a research report by Forrester Research's Galen Schreck, you should look for the following features when evaluating DCIM products:

Workflow integration. A DCIM platform enables the orchestration of processes at the facilities level, but they need to tie in to higher-level system management tools.

Asset and topology management. One of the fundamental capabilities found in DCIM products is the ability to record the technical details and whereabouts of a particular IT element, show what network and power connections it has, and graphically show it on floor plans or rack diagrams.

Analytics and reporting. All DCIM tools provide reporting, so focus on the quality of their analytics for capacity planning and energy management in particular.

Partnerships with key vendors. The long-term value of DCIM is tied to a product's ability to integrate with other system management tools or orchestration tools that optimize data center workloads.

Key Points

- DCIM is a relatively new system management platform that addresses the management and monitoring of physical assets.
- These tools provide a consolidated physical asset database, including graphically displayed location information, which can be integrated with a systems CMDB to provide a complete inventory of a data center's physical and logical assets.
- Other key features include the ability to monitor, record, and analyze power usage, analytics, and optimization software to assist with equipment placement and capacity planning as well as automation of physical deployment tasks through integration with IT ticketing and workflow systems.

storage equipment that is the data center's *raison d'être*, but often a facilities group is charged with running the physical plant.

With equipment densities skyrocketing, leading to an almost exponential increase in power and cooling demands, these two organizations have often been at loggerheads, with IT pushing data centers to the limits of available power and cooling capacity. As ESG senior analyst Bob Laliberte puts it, "Power isn't just a facilities problem anymore," and he adds that CIOs can't risk the embarrassment and financial consequences of downed servers because their data center ran out of juice.

This operational dichotomy has also been manifested in the divergent toolsets used to manage equipment. IT has long automated its systems, network, and support functions using increasingly sophisticated and integrated software suites that not only perform hardware monitoring, but can also orchestrate routine workflows and support processes and trouble tickets. Although such software automation has been slow to come to facilities management, DCIM (data center infrastructure management) software aims to fill that niche. Aside from improving operational efficiency, when integrated with existing IT systems management tools, DCIM can also help bridge that organizational gap between the IT and facilities groups, says David Flesh, director of IT service management at HP (www.hp.com).

DCIM Software Features

Forrester analyst Galen Schreck broadly defines DCIM as a systems management

Data Center Metrics Demystified

If You Don't Measure, How Can You Manage?

by Chris A. MacKinnon

• • •

DATA CENTER EFFICIENCY goes beyond knowing if servers are still up. These days, data center managers are accountable for energy usage, energy efficiency, compliance, regulation, and the list goes on. Performance must be monitored and trends must be predicted to ensure that the data center is always up and ready for capacity increases at any time. For this to happen, a well-designed set of metrics must be enforced. But there's plenty of confusion surrounding data center metrics, especially metrics such as PUE (power usage effectiveness) and DCiE (data center infrastructure efficiency).

Here, we break down some of the leading data center metrics in use in small to midsized enterprises, what they mean, and how knowing more about them can impact your enterprise.

Why The Confusion?

Daniel Kharitonov, senior staff engineer at Juniper Networks (www.juniper.net), says the confusion primarily stems from the fact that PUE as well as its reciprocal, DCiE, are advertised as "energy efficiency metrics" for the entire data center, but he says this is simply not the case. Kharitonov explains, "Both can determine only how much energy is lost in non-IT facilities, such as power transformers, the electric grid, and cooling systems. By definition, 'efficiency' is the ability to perform useful work at minimum cost point." He says if the data center cannot handle transactions at a minimum energy footprint, it does not matter how good the facilities are, because energy is still wasted with a PUE of 1.

Dr. Joe Polastre, CTO and co-founder at Sentilla (www.sentilla.com), says confusion exists because PUE and DCiE are not a measure of the data center's efficiency; rather, they are a ratio of total power consumption to IT power consumption. Polastre notes, "A standard physics textbook will tell you that 'efficiency' is defined as the amount of work completed for each unit of energy consumed. PUE and DCiE do not measure efficiency."

The Metric Lineup

Larry Vertal, executive director of The Green Grid (www.thegreengrid.org), says that small and midsized enterprises today

are the ones least likely to be using metrics. He says this is because staffing issues are acute in SMEs. He says many of the metrics used today by SMEs aren't even taking power and energy into account at all. Vertal comments, "Many are homegrown tools to measure CPU utilization, SPEC-ratings, [and] runtime duration measurements and don't take into account energy usage. Effectively, they only consider half of the issue of energy-based productivity."

Vertal says in some cases, data center managers try to guess at power usage and efficiency based on equipment nameplate ratings, which, he says, are highly divergent from the actual power or energy used.

Tate Cantrell, CTO of Verne Global (www.verneglobal.com), points out that beyond PUE and DCiE, there are other opportunities to quantify success. Cantrell says, "Uptime, for example, can be calculated as the percentage of time that the power is on or can even be analyzed as the percentage of time that stakeholder applications are online. Bandwidth and network utilization are also important metrics that show trends for how information is used within a data center and how a data center communicates with its stakeholders. And power utilization is an important metric that shows a data center manager what percentage of the facility is available for additional capacity."

Cantrell also says that average server utilization is an excellent way to show a data center manager how effectively the capital resources are being utilized within the data center. "Just because a low-PUE data center is effectively cooling the watts that are used to create information does not mean that the computational watts are being utilized effectively," Cantrell notes. "Through technologies such as virtualization, a data center manager can drive up average server utilization and improve the DCeP (Data Center energy Productivity)." Cantrell says that DCeP, which measures the ratio of useful work produced to total data center energy consumed, is the latest metric proposed by The Green Grid.

According to Kharitonov, an ultimate data center energy efficiency metric is how much it costs (on average) to run a transaction. He adds, "However, data center designers often do not have the end-to-end visibility early into a project and therefore need to consider DC components individually. At each component level, there are metrics for energy efficiency assessments. I would single out SPECpower (for servers), ECR (for network equipment), and PUE (for non-IT facilities). Together, these three metrics (or their functional equivalents) define the majority of energy uses within a data center."

W. Pitt Turner, executive director of the Uptime Institute (www.uptimeinstitute.org), says having competing metrics discourages the industry from taking any action. He notes, "The Institute, DoE, EPA, The Green Grid, and other organizations in the data center industry agreed in January 2010 to focus exclusively on the PUE. With the singular focus on PUE, this distraction should be eliminated."

Knowledge Is Power

So how can knowing more about these metrics impact the enterprise? Turner says

Key Points

- Some of the confusion surrounding data center metrics such as PUE (power usage effectiveness) and DCiE (data center infrastructure efficiency) stems from the fact that they are advertised as "energy efficiency metrics" for the entire data center, which is not the case. Both metrics can determine only how much energy is lost in non-IT facilities.
- Without metrics, data center managers are blind to where energy is being consumed and the impact of any actions they may take.
- DCeP (Data Center energy Productivity), which measures the ratio of useful work produced to total data center energy consumed, is the latest metric proposed by The Green Grid.

and profound impact on the utility bill. The CIO needs to be accountable for the cost of energy at a data center."

In Polastre's opinion, the data center is transforming to an industrial manufacturing facility, where the product boils down to compute cycles. He further explains, "If you view the data center in this way, optimizing data centers is a matter of process efficiency—how do you minimize the amount of energy in [and] waste and heat out and maximize the amount of work done? Benchmarking and optimizing applications for metrics like MIPS/watt and transactions/kWh lead to the overall system being more efficient, both facility and IT system."

Vertal concludes, "In a nutshell, if you don't measure it, how can you really manage it? Unless there is a sudden breakthrough in practical nuclear fusion, you should bet your business on the fact that energy costs will continue to increase. And as a result, the operational costs of data centers are becoming greater than the IT procurement costs. While the approaches may not be uniform by governments globally, we have already seen regulation emerging that includes data center footprints. Measurement and metrics become essential to address the emerging accounting systems." □

without metrics, operators and managers are blind to where energy is being consumed and the impact of any actions they may take. He elaborates, "Using metrics will help identify areas of opportunity and indicate the progress made. In many IT organizations, the CIO is not responsible for paying the cost for energy. Yet, the decisions made by the CIO have a direct

SPICEWORKS IT DESKTOP

NEW PRODUCT

by Nathan Lake

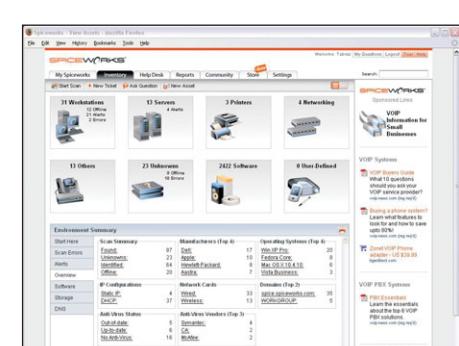
A Free Tool For Network Management

A POOR NETWORK MANAGEMENT program can make life miserable for you and other IT staff, but it can be tough to find the time or money to invest in new software. Spiceworks IT Desktop solves both problems. It includes network monitoring, help desk, PC inventory, warranty review, and IT reporting tools. And, because it's backed by sponsors in the Spiceworks IT Community, it's free. Here are just a few of the features:

Help desk. Within the Spiceworks IT Desktop, you'll be able to create an IT help desk portal where you can manage all your staff's help desk tasks such as creating, receiving, assigning, and tracking tickets. The portal also lets you share maintenance schedules, provide contract info, receive service requests, and post IT alerts. Best of all, it can all be done over the customizable Web portal.

Network monitoring. The IT Desktop's network monitoring tools are comprehensive, as you'll be able to see when a user installs an app she shouldn't or even when the printer's toner is low. Email management tools help you control the message load on your Exchange server as well as the size of user's inboxes. For monitoring, you can view charts

for all the network interfaces to see exactly how much bandwidth is being used and where.



Spiceworks IT Desktop

A simple-to-use program that lets you inventory the hardware and software on your corporate network.

Warranty review and inventory tools. There's Dell and HP warranty review tracking built-in for all devices, and Spiceworks will inform you when the warranty is about to expire. The IT Desktop's inventory features let you scan the network to view the PCs, routers, switches, printers, operating systems, and serial numbers. You can even find up-to-date information about PCs, including IP addresses and disk usage.

PUE Explained

According to Tate Cantrell, CTO of Verne Global (www.verneglobal.com), there is minimal confusion surrounding PUE in the industry. He says The Green Grid introduced the concept in 2007 to wide acceptance and has continued to educate the industry about the importance of data center metrics in continuous improvement of data center efficiencies. He notes, "The PUE is very simply the ratio of the total facility power to the IT equipment power (servers, storage, and network). Regardless of what measurement point is used in the PUE calculation, the fact that the majority of data center managers are now recording this metric on a regular basis and working to improve upon it meets the ultimate objective of the parameter—improvement."

FTC Investigating Privacy Issues With Copy Machines

The Federal Trade Commission is looking into suspected privacy issues related to the reselling of copy machine hard drives after a CBS News report revealed the ease of access to data stored on such devices. The CBS report uncovered documents containing personal health information, Social Security numbers, pay stubs with account information, and more on the hard drives of resold copy machines. Massachusetts Rep. Ed Markey sent a letter to FTC Chairman Jon Liebowitz requesting the FTC investigate whether the public is aware of this potential breach of their personal information.

Ken Weilerstein, a research vice president at Gartner, says this is no secret. "The copier and printer manufacturers have been selling solutions to this for the last five years or more. Customers do ask about it, but I suspect that many have never thought about it."

IDC analyst Keith Kmetz says he doesn't believe general consumers are aware of the privacy risks associated with using a publicly available copy machine. "Copier procurement teams should be more informed by their suppliers about the need to integrate security measures for their copiers," he says. "Copier vendors offer data security kits to alleviate this problem so that these files can be erased from the hard drive."

Depending on whether the copier has a hard drive and the size of that drive, both analysts agree hundreds of pages could be stored—up to 400GB or more, according to Weilerstein. "The problem is that even if you delete a file, remnants of it may remain on the hard disk drive. It is then possible for someone with the right skills and software to restore the file or reconstruct it. The same issue also exists with personal computers. In either case, it is possible to systematically overwrite the disk with a bit pattern that will eliminate the file," Weilerstein says.

Protect The Data

Documents that enterprises should protect when copying vary, as the CBS report showed. Privacy issues range from unprotected Social Security numbers to exposed banking information. "Ideally, though, the answer will be to properly protect the document in both paper and digital form," Weilerstein says.

He suggests enterprises find out the regulations for privacy and confidentiality pertaining to their industry as well as company-specific policies. Aside from services and supplier-provided kits to wipe the hard drive before resale or disposal, the enterprise must view the machines as a company asset worth protecting.

According to Kmetz, "[Enterprises] have to realize that the copier is just like a computer or server or other IT asset. It can't be disposed of in the same manner as old copiers might have been in the past." He says copy machines are "hackable" and contain sensitive and vulnerable information. "Now it's a matter of taking care of this need as standard procedure."

by Antona Beckman



Seeking Zero Hardware Downtime

Know Your Options For Maximizing Uptime

by Bridget Mintz Testa

• • •

IN TODAY'S 24/7 WORLD, disruption of IT resources and connectivity can send a company into a tailspin. To prevent this from happening, managers can sign their enterprises up for managed services or duplicate critical IT hardware, such as servers, network infrastructure, and data center equipment. That is, if they spend enough money.

Budgets are often a constraint, though. So, managers should look closely at their companies' needs for uptime. Zero downtime is ideal, but it's not necessary for every situation, and some enterprises may find they can handle more frequent periods of downtime.

Know Your Business Case

Before an enterprise can determine its needs for uptime, and therefore how much it should spend and on what, it needs to critically analyze its operations by asking some pointed questions. "Who cares about the business? What will they do and how will they react if the company is down?" asks Bill Malik, research director for infrastructure and operations at Gartner. "What about the competition? What does an hour of downtime cost me? What does a customer switch cost me?"

that specializes in IT solutions for smaller companies. "That can take three to four days."

To avoid having to manually copy functions, configurations, files, and programs from one server to the other, there is software available to make these tasks easier. These programs mirror whatever is on one server to the designated backup, and they can also mirror multiple servers to one or more designated backups.

Eliminating maintenance downtime can be a simple task if you have multiple servers and mirroring software. You'll take one server offline; perform updates, upgrades, and testing; and then put it back online and let the mirroring software update the other servers.

Virtualization comes in handy for this purpose, too. Grier explains that you can have one physical server with a virtual layer and install the other servers on top of the virtual layer. "You can test updates and any other software on the virtual server."

Maintenance entails more than upgrades; you also must deal with any problems that arise. And server monitoring software is helpful as it logs events, letting your IT personnel find and correct pressing issues. When exploring options for minimizing downtime, consider duplicating the elements of your enterprise's

"The typical configuration is a mirrored site on the same campus, and then a third, remote site."

- Gartner's Bill Malik

When a company begins to address these questions, it can then "figure out the critical business processes, which ones involve computers, and what it needs to keep running all the time," Malik explains. Every enterprise is different, so "there's no such thing as a meaningful average."

Keep Servers Running

Two types of downtime exist. There are "unplanned outages from disasters and continuous operations that stay up without the need for planned maintenance," Malik explains.

Addressing unplanned outages in regards to servers is as simple as setting up at least one duplicate server. If an enterprise has multiple servers, IT personnel can designate one as a backup for the others. It's obviously best, too, if the backup server isn't in the same location as the primary server; otherwise, an unexpected event, such as a loss of power, can take them both out.

"If a server fails, you must replace the failed component, reload everything, and then reload the data," says Mike Grier, a managing partner of Southeastern Computer Associates, an Atlanta-based company

network (the switches, routers, firewalls, UPSes, LAN controllers, and servers).

"The typical configuration is a mirrored site on the same campus and then a third, remote site," Malik says. "Backup routers, UPSes, and other equipment are driven by capacity. The cost of the backup is related to the quickness of response. Generator price is driven by power."

When evaluating network hardware for downtime, "make sure there are no single points of failure with your equipment, infrastructure, or emergency generator or UPS," Malik explains. He cautions that switch infrastructure can be a single point of failure that goes unnoticed. If you don't own your own building, it can be difficult to do anything about it.

Achieving Zero Downtime

The simplest hardware zero downtime solution for most SMEs is achieved using managed services. "Smaller organizations don't strive for or achieve 100% continuous operations," says Bill Malik, research director for infrastructure and operations at Gartner Research. "Going from 99.99% uptime to 99.999% requires an eight- to 10-fold increase in costs. This is why small organizations typically go to a third party."

Key Points

- To determine whether your enterprise can endure downtime and, if so, how much, IT personnel will need to analyze the effects of various levels of loss of services to customers and other users.
- Duplicating equipment and implementing mirroring software is the simplest solution for achieving minimal downtime for hardware, including servers and network infrastructure elements.
- Achieving zero downtime in a data center requires a Tier III/IV solution, which is beyond the means of most SMEs. To achieve that, managed services are the best choice. Tier I/II data centers, which must be taken offline for maintenance, may provide sufficient uptime and are more feasible for many SMEs.

You'll also want to be sure to maintain your enterprise's primary and backup equipment. Duplicate equipment means that you can take some components offline while you perform maintenance on the rest.

Data Center Tiers & Downtime

With data centers, "It always goes back to the business case," says Julian Kudritzki, vice president of the Uptime Institute. "Every organization must start there. It determines an organization's tolerance for downtime."

If an organization truly can't accept any downtime for its data center, then it requires a Tier III or Tier IV facility. A Tier III facility has duplicate capacity components (cooling and power), but the switchover between them is not automatic, whereas switchover is automatic in Tier IV data centers.

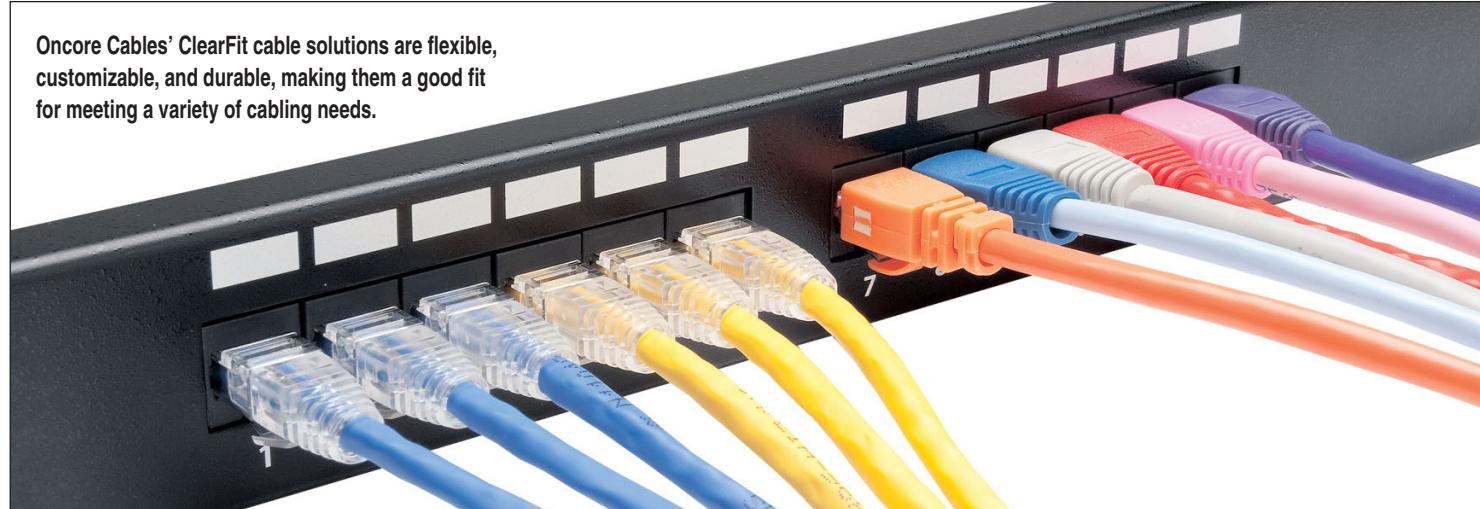
If an enterprise won't damage its business by allowing maintenance-related downtime, it can independently move to a Tier I or Tier II setup. A data center is classified Tier I if it has no duplicate power or cooling components. A Tier II facility has duplicate power and cooling components but only one distribution path, so it still must cease operations during maintenance.

"Backup power, a dedicated room, and a 24-hour-a-day cooling system is Tier I," Kudritzki explains. "Just for Tier I, you can't rely on building cooling systems. You either must patch into the central cooling system so you get 24-hour temperature stability or build a dedicated system." □

Innovative Cabling Solutions That Fit Your Space

Oncore's ClearFit Patch Cables Are Free Of Splines, Making Them Slimmer & More Flexible Than Other Solutions

Oncore Cables' ClearFit cable solutions are flexible, customizable, and durable, making them a good fit for meeting a variety of cabling needs.



by Seth Colaner

• • •

NOT ALL PATCH CABLES are created equal; there are differences in how one manufacturer constructs a cable vs. another company. The construction of Oncore Cables' ClearFit cables (www.oncore.com) demonstrates the company's intent to keep its cables slim, flexible, and easy to work with in the small space afforded by patch panels in network closets.

Cabling Expertise

Oncore Cables' interest in cabling grew out of its success in the mobile power supply market. The California-based company grew out of Oncore Power Systems. In its previous iteration, the company focused on aftermarket replacements for portable power sources for notebooks.

Oncore has maintained its interest in that market, believing that other mobile devices such as netbooks, tablets, and PDAs are proliferating enough to warrant a need for its power solutions, especially as those devices become more powerful and demand more from their batteries.

The company's entrance into the cabling industry is a recent development, starting in 2007 with Oncore Power Systems' partnership with cable industry veteran

Brian Richardson, who now serves as Oncore Cables' executive vice president.

Today, Oncore Cables offers a wide range of cable solutions in addition to its ClearFit cable line, including stock and custom fiber cables, CAT 3 and CAT 5e telcos,



ONCORE CLEARFIT PATCH CABLES

(949) 777-2255

www.oncorecables.com

Cables sold ONLY through distribution.

Description: Custom-length, low-profile CAT 5e and CAT 6 ClearFit patch cables that are designed to keep the cable clutter in IT areas to a minimum while providing durability and strength.

Interesting Fact: Originally, the Oncore's No Kink cable and the snagless end clip design were two separate products, but they were each so popular that the company combined them into one product, the Clear-Fit cable.

various power cords, audio/video cables, custom coax assemblies, and a variety of adapters and miscellaneous cables. Many product options are customizable in terms of length, color, and other customer needs.

ClearFit Cable Solutions

Traditionally, CAT 6 cables are built with a plastic spline running through them, which serves to separate and increase the space between pairs and also adds thickness and rigidity to the cables. Oncore took a different approach with its ClearFit cables, according to Richardson: "We use a CAT 6 cable that doesn't have a spline, yet the cable still meets all the transmission and physical requirements to allow CAT 6 compliance to be achieved."

The absence of the spline also enables Oncore to reduce the diameter of the cable itself. The average girth of a CAT 6 cable is about 6 to 6.5mm, but ClearFit cables are just 4.75mm. The overall effect is that ClearFit cables take up less physical space in a network room, and they're easier to flex and move around, as well.

The end clips of ClearFit cables are low-profile, which cuts down on the space each end takes up in the panels and the switches. They're also snagless, meaning it's much easier to insert and

remove cables in a panel with closely spaced ports.

Easy Customization

The biggest selling point for ClearFit cables, however, is the level of customization available to customers. "We can do any custom length," Richardson says. "We can do 6 inches or 7.5 feet—basically, we can do any custom length. If [customers] want 27-footers, we can get them 27-footers."

The logic behind customized lengths is simple: Different situations call for different lengths of cable, and having extra slack can be a pain for IT workers. Richardson notes that many manufacturers only offer a few set cable lengths—3, 5, 7, 10, 15, 25, and 50 feet, for example. "If you've got anything between 25 and 50 [feet], you're going to have a lot of slack, especially if you need 29 or 30 [feet]."

ClearFit Features

- Spline-less ClearFit cable design
- Snagless end clip design
- Cable diameter of 4.75mm, as opposed to the standard 6 to 6.5mm cable thickness
- Custom cable lengths, colors, and branding
- Low-profile design for easier insertion and removal in patch panels
- Individually tested
- Lifetime guarantee

Additionally, ClearFit cables are available in 15 different colors with options for custom branding, which adds another level of customization to the cables. Customers can color-code their network closets, use sequential labels, and perform other organizational tasks by taking advantage of the cables' customization options.

As for how fast your custom order makes it out of Oncore's facility, Richardson says that almost all orders are on their way to the customer in one to two days. **P**

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On-Demand Cloud Hosting

ReliaCloud Offers Ad Agency A Burst Of Affordable, Reliable Computing Power

by Robyn Weisman

• • •

MINNEAPOLIS-BASED advertising agency Preston Kelly boasts a client list that larger firms in Los Angeles and New York might envy, including Roundy's Supermarkets, Taco John's, Physicians Mutual, Health-Partners, STAGG Chili, Hormel Foods, and the Minnesota Zoo, among others.

In December 2008, the agency introduced a new holiday game for its partners and clients, an online version of the White Elephant game that lasted for a week. Clients could virtually steal and resteal one of three-dozen mostly gag gifts as many times as they could during the time period in the hopes of getting a Wii Fit or an iPod. Those who won canned goods had their gifts turned into a cash donation to feed the hungry.

However, the agency ran into a problem as the week wrapped up. "We had traditional hosting, [where] we had to pay for it based on what our average traffic is. Our average traffic is fairly low, but during

those last 10 minutes, people were hitting the servers so hot and heavy that the game didn't fail, but the servers were so slow that it didn't register that you had actually clicked to steal a gift until the game was ended," says Melody Lentsch, director of interactive at Preston Kelly.

Despite the glitch, the game was a success with Preston Kelly's clients, and the agency decided to bring it back the following holiday season. But the agency didn't want to pay \$10,000 for 10 minutes of traditional hosting. During its search for a solution, the agency came across ReliaCloud (www.reliacloud.com), an Eden Prairie, Minn.-based cloud provider with a hosting solution that was just going into beta.

"We told [ReliaCloud] our dilemma, and they said that because of the way cloud computing works, we could pay for a model that would meet the needs of our game," Lentsch says.

Ultimately, Preston Kelly decided to take a chance on ReliaCloud, and according to

Lentsch, the agency was thrilled with the results. "Sure enough, our game did not fail. We had thousands of hits to the server every second during the last 10 minutes of trading, and the game functioned at about 100% during that entire time," she says.

The Right Hosting Solution

Although Preston Kelly looked at offerings from traditional hosting providers, none of them offered an easily scalable solution. "With traditional hosting, you would have a dedicated box or a shared box with other people, and you only have the capacity in that box or stack. We would have needed at least 20 servers for those last 10 minutes if we had wanted to run it traditionally," Lentsch says.

Unlike traditional hosting, cloud computing can borrow from however many servers it needs at a given time, Lentsch says. "The cloud automatically scales and lets you tap into servers all over the place when you need it, and once you don't, they can be used instantly by someone else," she says. ReliaCloud's pay-as-you-grow strategy was especially attractive to Preston Kelly because the agency would only have to pay for what it actually used and would not have to pay any setup fees to get started.

ReliaCloud Product Manager Johnny Hatch explains that ReliaCloud uses a con-

nections, and a fire suppression system. If for some reason a node fails, ReliaCloud can automatically redirect traffic somewhere else within its cloud because it stores data in its RAID 10-protected storage nodes.

Handling The Load

In addition to its competitive price, Lentsch says she appreciated the ways in which ReliaCloud customized its solution to Preston Kelly's particular challenge. "The fact that they offered live human beings for support during the entire last hour of the game was very helpful to us. I don't know what they would have done if we had gone down, but they were standing by to monitor the cloud" during that span of time, says Lentsch.

Preston Kelly and ReliaCloud independently performed extensive load testing before going live and then compared notes. "We had some scary math going on, depending on how many people played the game, but it turned out our load testing was heavier than what actually happened," says Lentsch.

Hatch says that ReliaCloud deployed four load-balanced Windows Web servers running Microsoft .NET on the front end that connected to one back-end Microsoft SQL database. All the front-end Web servers used



sumption-based pricing model. "If for some reason no one came [to the game] and there was no data transfer, [Preston Kelly] would not have to pay for anything," he says.

However, many of the larger cloud hosting providers were not equipped (or perhaps inclined) to handle Preston Kelly's unique requirements. "Many cloud services are pretty automated. You go online, sign up, and you never really talk to a person," says Lentsch. "There's nothing wrong with that if you have more traditional needs, but we had such a unique load concentrated in such a small amount of time that every time we called any of the bigger [cloud services providers], we got responses like, 'Uh, that's unusual.' These companies, cloud or not, are just not set up to deal with that."

Experience & Reliability

Preston Kelly felt fairly comfortable testing out ReliaCloud, despite being in beta. ReliaCloud is a division of VISI (www.visi.com), a colocation, hosting, and managed services solution provider based in Minneapolis, and the agency already used VISI for some of its hosting and Web application needs. "We know the people there, and they're part of our community," says Lentsch. "We probably could have gone with some other cloud computing option, but for us, ReliaCloud seemed the best match."

ReliaCloud's two data center facilities, one in St. Paul and the other at its Eden Prairie headquarters, also engendered confidence. The specifications for both facilities include SAS 70 Type II certification, multiple UPS and generator units, hardware-based firewalls, onsite technical staff at all times, biometric hand scanning for

a single IP address associated with the database server. ReliaCloud easily managed the peak traffic, when participants were making more than 65 steals per minute. "ReliaCloud scaled perfectly, and we didn't have any slowdown," Lentsch says.

The four front-end servers acted as one load balancing Web server that handled the traffic the White Elephant game's Web site was receiving—and if for some reason Preston Kelly had needed more on the front end, ReliaCloud could have easily expanded the setup to other servers.

Lentsch says that Preston Kelly's experience with ReliaCloud was so positive that the agency will be using it for this year's White Elephant game. "In fact, it made [ReliaCloud's] entire hosting operations more attractive to us for future hosting needs beyond this one specialized application because they are so customer-centric," says Lentsch. □

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"The fact that they offered live human beings for support during the entire last hour of the game was very helpful to us. I don't know what they would have done if we had gone down, but they were standing by to monitor the cloud" during that span of time, says Melody Lentsch, director of interactive at Preston Kelly.

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FEATURE PACKAGE

Top Tech Trends In Four Key Areas

What technologies and trends will be shaping storage, networks, communication, and cloud computing in the near future? We talked with some industry insiders to find out.

Today's Top Storage Trends | 23

■ Data center storage is the one area that expands not only in capacity but also in complexity as a result of virtualization, and most of the top storage trends center around meeting those challenges.

Network Infrastructure Developments | 24

■ As data centers continue to expand and customers continue to demand more capacity, better efficiencies, and higher speeds, data center managers are installing new, faster capacity throughout their network infrastructures.

What's New in Communications | 26

■ Planning for trends in voice communications in a data center can be difficult as the market expands, changes, and evolves quickly. Here's a look at what's coming down the pipe.

Happenings In The Cloud | 26

■ The subject of cloud computing is generating quite a bit of buzz in computing circles, and there are several trends that admins should keep an eye on.

Today's Top Storage Trends

The Growing Popularity Of Virtualization Is Driving Storage In A New Direction

by George Crump

• • •

MANY OF THE TRENDS in storage over the next few years are in response to the success of server and desktop virtualization. Consolidation is a key benefit of both of these forms of virtualization: There are fewer servers, fewer physical desktop machines, and fewer physical network interfaces, and in many cases, less total RAM is needed. Data center storage is the one area that expands not only in capacity

Key Points

- Server and desktop virtualization are key influences on future storage trends, replacing the traditional demand for capacity and performance.
- Storage management is increasingly important as capacities and demand continue to grow rapidly.
- That growth in capacity and demand is driving a move to new networking infrastructures and changes in the way SMEs perform backups and recoveries.

but also in complexity as a result of virtualization, and most of the top storage trends center around meeting those challenges.

David Messina, vice president of product management at Xangati (www.xangati.com), agrees that the move toward VDI (virtual desktop infrastructure) is one of the biggest influences on upcoming storage trends. "VDI places the responsibility for the end-user experience squarely on the shoulder of the data center virtualization team and their peers in the storage group," he says. "What used to be 'their' desktop with its own storage is now the data center's storage. This is a fundamental change in the relationship between the user and the data center. What was maybe a few dozen physical servers can now be potentially hundreds if not thousands of virtual machines (VMs) for end users, all with their own need to regularly access central data stores."

Storage Management Is Key

The high amount of storage end points presented by virtualization expands the criticality of key storage management trends that exist today in some fashion and increases IT's need to focus on maintaining a positive end-user experience. "Unlike server virtualization, where the focus is on high storage performance to a few servers, VDI changes the focus to consistent performance across hundreds of end points," Messina says. "To accomplish this, IT administrators are going to

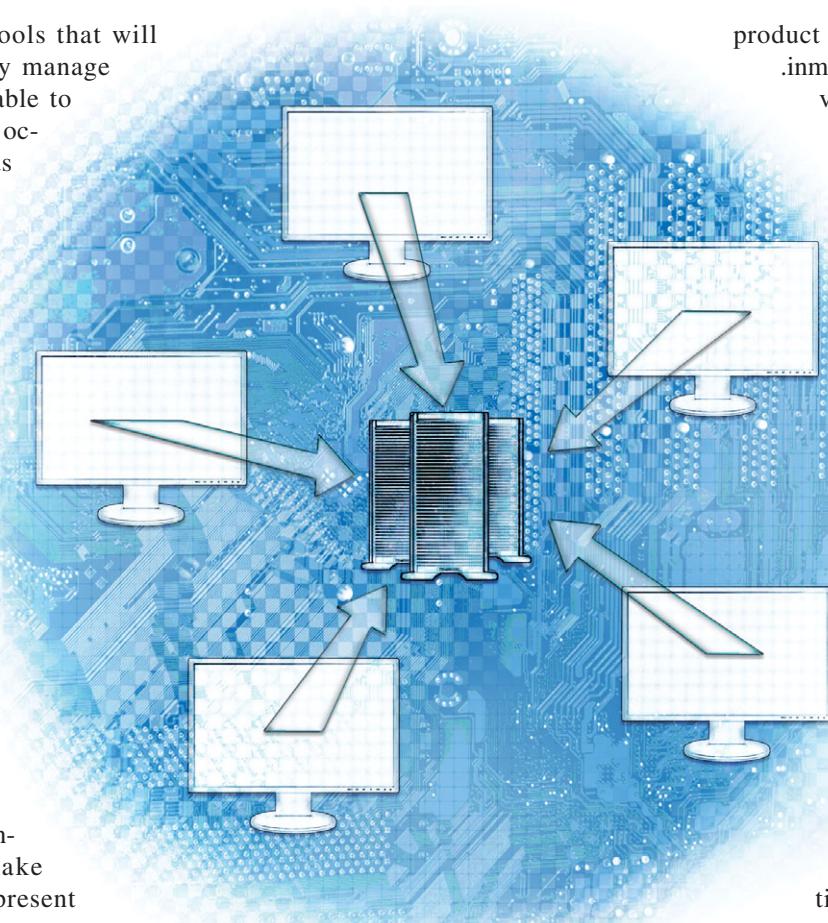
need to be armed with tools that will allow them to proactively manage the environment and be able to fix problems before they occur." Messina recommends using software that understands the ways in which each virtual server interacts with storage, trending that information over a period of time, making a predictive analysis of that data, and alerting the admin to potential problems.

There are too many end points for individual inspection or to keep in a spreadsheet. The key trend is that storage management software must become virtualization-aware and be able to make predictive analyses and present problems to the IT team, not expect them to find the time to manually perform their own comparisons. Further down the road is software that will automatically make adjustments to the environment and not even wait for IT confirmation.

Changes To Storage Networking

Virtualization is also driving a rapid move to 10GbE as an infrastructure for shared storage. Although the storage industry spends much time arguing the merits of the various protocols of iSCSI, NAS, and FCoE (Fibre Channel over Ethernet) storage, the one thing it does seem to agree on for the most part is that the eventual transport infrastructure will be Ethernet-based.

Shaun Walsh, vice president of corporate marketing at Emulex (www.emulex.com), agrees. "When it comes to storage connectivity, we have reached a point for many organizations where 10GbE performance [combined] with iSCSI and FCoE is good for the majority of the applications," Walsh says, adding that in most cases, 10GbE can be far too much bandwidth for any single application or VM. "In a virtualized environment, especially with blade-based server technology, there is not enough room for multiple 1GbE interfaces per virtual machine," he explains. "New virtualized NIC capabilities enable 10GbE pipes to be divided up and provisioned to deliver the right bandwidth for each VM while lowering I/O cost and complexity."



For more information on networking trends, turn to "Network Infrastructure Developments" on page 24.

Modified Backup Strategies

Server virtualization influences data protection, so a key trend in storage is a gradual move away from full backups and a greater emphasis on recoverability. Eric Burgener, senior vice president of

product management at InMage (www.inmage.com), believes that thanks to virtualization, we will see a move away from resource-heavy, once-a-night backup jobs.

"There is just not enough bandwidth, CPU power, and backup destination capacity to continue to hold repeated copies of data," he says, adding that he sees a move to a more lightweight continuous protection of data. "Continuous data protection (CDP) allows for data to be protected throughout the day, and it actually reduces the load on the protected servers, the network, and the secondary storage."

When it comes to virtualization, Burgener sees CDP as the natural fit. "From the administrative perspective, it is just easier to think of virtual machines as standalone entities," he says. "It allows you not to have to be a virtualization expert to recover data. If you are protecting the VM as if it were a server, you can perform recoveries the way you always have." The challenge with using traditional backup software per VM is the consumption of resources. CDP solves those issues by performing lightweight continuous backups of the environment, allowing the user to recover from any point in time. □

Top Trend: Power Management

One of the most important trends in storage is dealing with the amount of power that storage systems consume, because although server and desktop virtualization strategies consolidate almost everything, power consumption actually grows because of denser and more advanced storage technologies.

"The first step in making storage more power-efficient is to establish a baseline of what is currently being consumed by the environment," says Michael Rowan, co-founder and CTO of Viridity Software (www.viridity.com). "Often power savings is calculated by an educated guess, and data center managers are surprised when they later find out there is no more power to pull to the building."

Developing an educated guess is particularly hard in storage, where many vendors use fuzzy math to show a power savings. For example, some vendors will claim that using 2TB drives instead of 1TB drives is more power-efficient—and it is, as long as the number of drives is reduced, but that isn't always what happens. Even more speculative is the power-down or spin-down drive scenario, because without any analysis tools that can calculate how often those drives actually have been in a rested state and then producing a calculation of what that cost savings is, there really is no way to know and project what the power savings will be.

"The key is to develop that power utilization baseline [and] then to have a tool that will monitor power usage as well as forecast future power consumption," Rowan says.

Study: Cloud To Become Dominant Platform

According to a Pew Internet & American Life Project study, cloud computing will become the dominant platform people use to run applications and access data over the course of the next decade. The study reports that by 2020, cloud computing will overtake traditional desktop computing.

According to the survey, 71% of users say they will rely on Internet-based applications and smartphones instead of the traditional PC and locally hosted applications. About 27% of the survey respondents predict that, by 2020, most users will still be primarily using a general-purpose PC.

Study: Cell Phone Use While Driving More Common For Adults Than Teens

Adults are more likely than teens to text and talk on their cell phones while driving, according to the Pew Internet & American Life Project. Pew reported that 47% of texting adults (aged 18 and up) say they have sent or read a text message while driving, compared to 34% of texting teens (aged 16 and 17). Adults are also more likely to talk on the cell phone while driving (75% of cell-owning adults) compared to teens (52% of cell-owning teens). The survey notes that beyond driving, 17% of cell-owning adults surveyed have physically bumped into another person or object because of cell phone distractions.

Cisco To Invest \$1 Billion In Russia

Tech giant Cisco Systems has announced that it plans to invest \$1 billion in Russia-based company projects in order to encourage entrepreneurship in Russia. Russian President Dmitri Medvedev, visiting Cisco's Northern California headquarters as part of a tour of Silicon Valley tech companies, witnessed the signing of a memorandum of understanding between Cisco and Russia. Medvedev's tour included visiting Twitter's HQ and posting his first tweet: "Greetings to everyone, I'm at Twitter and this is my first message." Russia is planning to build a high-tech innovation center outside of Moscow, and Cisco will put \$100 million in venture capital into that project.

Apple & Devices Dominate Mobile Web Consumption

According to a new study from Quantcast, Apple's iPad accounts for 0.1% of all Web use, putting it at the same level of Web usage as BlackBerrys, which also account for 0.1%, in just under three months of availability. It also matches the combined Web use of devices running WebOS, Brew, Java, Symbian, and Windows Mobile. Android-based devices accounted for a 0.25% share of total Web use, while the iPad, iPhone, and iPod touch combined represent a 1% share of all Web consumption in North America. Quantcast also noted that 60% of mobile Web use comes from iPhones and iPod touches.

Q1 Smartphone Shipments Decline Slightly

In what analysts are saying is actually "an indication of dynamic growth," smartphone shipments declined by about 1 million in the first quarter from about 56 million in the fourth quarter of 2009. However, because Q1 sales are generally much lower than Q4 sales, the smaller-than-expected decline is actually being hailed as a sign of strong performance in the industry. ABI Research analysts say that part of the overall growth was due to less expensive smartphones entering the market; Nokia, bolstered by sales of its inexpensive C and X series phones, actually recorded a rise in Q1 shipments—from 20.8 million in Q4 2009 to 21.5 million in Q1 of this year.



FEATURE PACKAGE

Network Infrastructure Developments

Higher Speeds Are In Demand, Requiring New Technologies & Tougher Security

by Phil Britt

• • •

AS DATA CENTERS CONTINUE TO EXPAND and internal and external customers continue to demand more capacity, better efficiencies, and higher speeds, data center managers are installing new, faster capacity throughout their network infrastructures.

"One of the things that we are starting to see is that data centers are building for what is coming down the road," says Mark A. Gilmore, president of Wired Integrations (www.wiredint.com). Here is a look at some of the network infrastructure trends that SMEs are looking at to help increase their networking capacity.

Fiber vs. Ethernet

Some data centers are ensuring top speeds by using blazing fast fiber connections, but most are still using CAT 6 Ethernet connections and a high-speed backbone to all data center devices, Gilmore says. "Fiber is going to cost them twice as much, so most of them are fairly resistant to [installing fiber] right now," Gilmore says. "As the technology continues to advance, the throughput will continue to grow."

Key Points

- Data centers are adding faster components throughout their infrastructures to meet the demand for ever higher throughput.
- Although data centers are trying to increase speed and capacity, they are also trying to simplify the infrastructure wherever possible.
- Security is an essential component of any data center and can add unneeded costs and latency if not done properly.

Fiber is most useful for any long connections needed in the data center, according to Tara Van Unen, senior manager of market development for Ixia (www.ixiacom.com). "We're seeing more of a push for service-oriented platforms and an increasing amount of on-demand services, so data centers need applications that are accessible at any time. To do this, they need to have large enough pipes."

Van Unen adds that Ethernet connections, while less costly than fiber, suffer from noise and signal degradation over longer distances. Additional power is needed to boost the Ethernet signal to attempt to compensate for these problems.

To combat these problems, many data centers are using a combination of Fibre Channel and Ethernet connections by moving to FCoE (Fibre Channel over Ethernet), which enables them to combine the two types of connections in a single Ethernet network. Combining the connections lowers the cost of running the two connections over their own dedicated networks, which would require multiple interfaces.

"The main goal is to provide consolidation for the first hop to the core switch," Van Unen says. "FCoE simplifies the data center architecture while reducing costs and increasing bandwidth capacity."

Newer, Faster Switches

Another way that throughput is growing is through 100Gb switches replacing 40Gb switches for the core of the network, says Ray Suarez, director of product management for Enterasys (www.enterasys.com).

Though there are still many data centers with 10Gb switches in the core, Suarez recommends that any new switches for the middle or end of the row be 40Gb or 100Gb and have modular designs that make for easy upgrades. Upgrading other switches throughout the network can also help provide better speed. However, Suarez says that although the more robust switches provide benefits of higher speeds, there isn't enough ROI to undertake it unless it is part of an expansion or server refresh project, which most data centers undertake every three years or less.

Some vendors are building more proprietary elements into their routers, switches, and other devices, meaning they are attempting to lock buyers into that vendor's set of products rather than being able to use a best-of-breed approach. Suarez recommends that managers use infrastructure devices and components that enable the data center to operate in a heterogeneous environment.

Simplifying Infrastructure

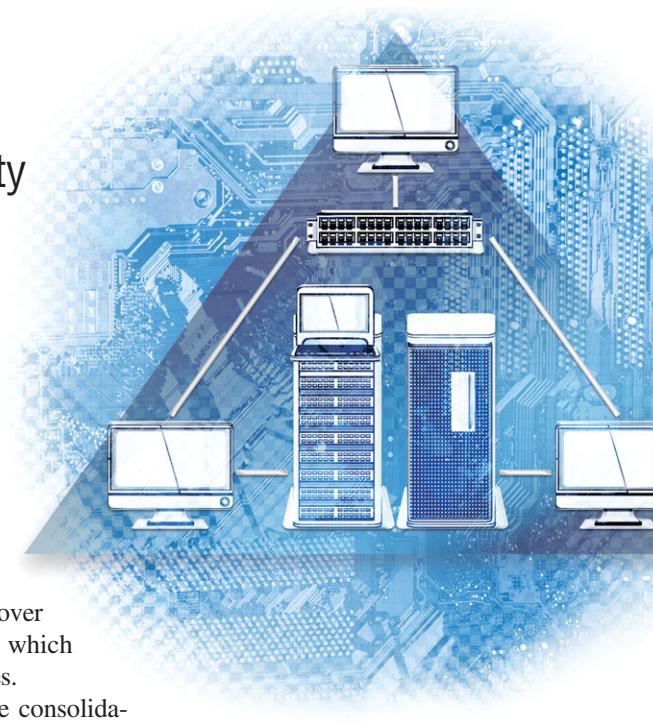
Although data centers are expanding, there are some areas where the infrastructures are becoming less complex. Many of the newest technology trends are designed to simplify the management of the data center network infrastructure.

Top Technology: Network Management Software

As data centers continue to grow, it is increasingly imperative to be able to quickly diagnose and solve problems with switches, connections, or other "physical fabric," says Asas Somekh, vice president of marketing for Voltaire (www.voltaire.com). "People need to be able to manage the whole fabric of the data center, not just individual switches."

Software to manage and troubleshoot such an infrastructure must be able to work in a multivendor environment, Somekh adds, because as data centers expand, they will invariably have legacy and newer equipment, so they are likely to have a combination of products from multiple vendors. So the application must be able to find problems such as switches or connections that are not working properly and identify actual or potential bottlenecks in the data center.

"For example, if there is latency between two servers, you need to know that so that you locate them close together [to keep latency to a minimum], rather than having them on opposite sides of the data center," Somekh says.



A few years ago, it was commonplace for three to four cable drops to accompany each workspace, according to Gilmore. But with the widespread adoption of VoIP connections, one or two cable drops are more common because the additional ones are no longer needed.

Similarly, many of today's server racks have three sets of switches, which data center managers can consolidate into two, says Asas Somekh, vice president of marketing for Voltaire (www.voltaire.com).

By using larger-capacity switches, data centers can eliminate one set of switches throughout the data center, simplify design, and minimize points of failure, Somekh says.

Additionally, using switches with large enough capacity and with enough open ports eliminates bottlenecks at the switches, which Somekh cites as a major problem in some data centers today.

Security Considerations

Just as data centers have handled additional demands for processing power by adding servers, most have met the need for additional network security by adding different devices to handle increasing security threats, says Howard Ting, director of marketing for Palo Alto Networks (www.paloaltonetworks.com).

However, just as the complexity of the network infrastructure grew from additional switches, the same is true of the additional security devices, Ting says. "As threats to the network evolved, rather than solving the problem by adding threat protection to a device they already had, vendors have solved the problem by selling new point solutions," he continues. "Some data centers were running as many as six to 12 additional devices, meaning a lot of additional costs."

In addition to the cost of the devices themselves, there are also additional power and cooling costs for each. A better idea, and one that is more cost-effective for data centers, is to offer all of the necessary firewalling and other security solutions in a single device, according to Ting. But whether on one device or on many, the security solutions have to work in such a way that they don't slow down the speed of the network, he adds.

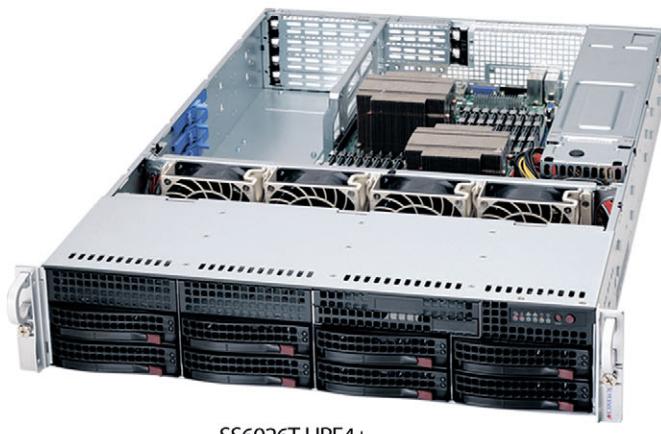
Ting also recommends working with a security vendor that will keep the data center abreast of the newest and latest security threats. **P**



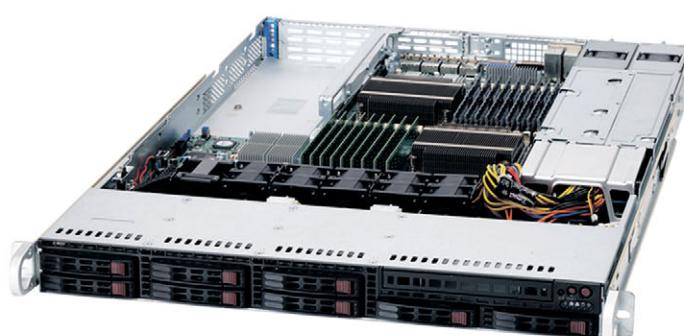
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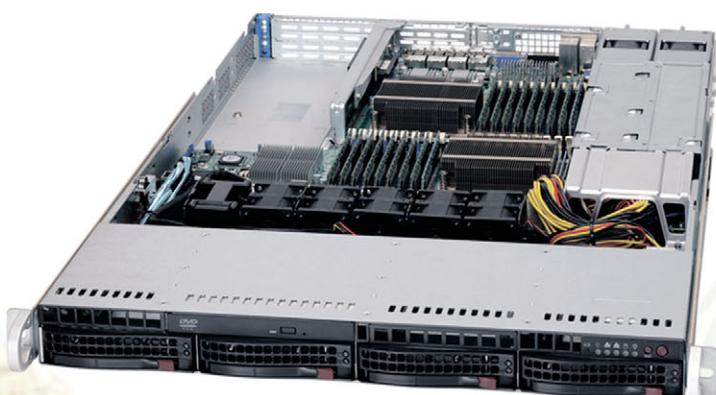
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What's New In Communications

Telepresence, Collaboration & Other IP-Based Technologies Are Gaining Ground

by John Brandon

• • •

THE WRITING IS ON THE WALL, and it's in 100-point type: Unified communications, VoIP, telepresence, and other voice services running in the data center are here to stay. In fact, all signs point to a resurgence this year as more smartphones and laptops are equipped with videoconferencing features.

Planning for trends in voice communications in a data center can be difficult as the market expands, changes, and evolves quickly. One day executives are talking about implementing a suite in the back room for holding a videoconference between branch offices; the next week, they might suggest that every employee have these capabilities at the desktop, in high definition and with high-quality audio.

Cost-Saving Benefits

According to Hyoun Park, a research analyst for telecom and unified communications at Aberdeen Group, voice communication services running in a data center over IP

networks will lead to significant cost savings this year in many small to midsized companies, including those companies that have decided to move away from traditional phone networks. The savings come from the consolidation of services, easier management overhead, and smoother IP communication.

Key Points

- IP-based voice and video services will expand even more this year, which will then lead to adoption of other services, such as unified communications.
- New virtual machine demands and network bandwidth needs will cause managers to think seriously about WAN optimization techniques, which streamline network services.
- SMEs must plan for the increased demand on network infrastructure and bandwidth that inevitably comes with new communications technologies.

This trend will then create a domino effect that leads to more savings and better services within the organization once VoIP is up and running. Companies will then look closely at additional services such as unified communications, which provides multiple IP-based methods of communicating.

including voice chats, instant messaging, and voice services; voice chats between employees on instant messaging systems intended for business; and VoIP.

"With the cost structure and IP-based solutions that currently exist, voice should be on the roadmap of every data center, if it isn't already," says Park. "Voice is quickly becoming just another application that is managed through the data center. Although it has its own unique measurements for quality of service (which adjust bandwidth for quality) and service-level agreements, data center and network services managers must understand enterprise demands for voice now to ensure that they will have suitable solutions that align both to their current infrastructure and the needs of employees."

"Trends in this arena for 2010 and beyond will be adding on layered options of telepresence, collaboration, and video to this expectation," adds Mike Johnson,



Happenings In The Cloud

A Look At Technologies & Trends That Are Developing In The Cloud Computing Market

by Sixto Ortiz Jr.

• • •

THE SUBJECT OF CLOUD COMPUTING is generating quite a bit of buzz in computing circles. And why not? Cloud computing promises to level the playing field by enabling companies of all sizes to take advantage of cutting-edge technologies without needing enterprise-size budgets to make it happen.

Another key aspect of cloud computing is that it shields users from the details of a technology. This means administrators don't have to worry about understanding the nuts and bolts of a specific technology or worry about the maintenance and configuration headaches that come with many enterprise-class applications. In other words, applications are delivered like utilities.

Here is a look at the top trends in cloud computing and the details and nuances administrators should be paying attention to if they plan to move toward using applications in the cloud.

Why All The Fuss?

There are numerous reasons why cloud computing is garnering so much attention today. For starters, says Carl Hillier, director of strategic marketing for infrastructure services at Fujitsu America (www.fujitsu.com/us), cloud computing's ability to rapidly provision resources is ideally suited to today's dynamic market environment. And, he adds, the utility pricing model mitigates

the risk of organizations becoming saddled with financial burdens caused by excess IT infrastructure.

Another compelling reason, says Nati Shalom, CTO at Israel-based GigaSpaces (www.gigaspaces.com), is the fact that companies want the agility to move faster and have services on demand. Colleen Smith, vice president of SaaS for Progress Software (www.progress.com), says any company would be crazy not to investigate potential savings delivered by cloud computing's lower price points vs. traditional upfront purchasing and license fees. Also, she adds, the speed of technological change means making capital investments in servers and license and maintenance fees is no longer the logical way to obtain technology and services. Companies don't want to spend 80 to 90%

of their IT budgets solely on maintaining systems, applications, and infrastructure, Smith concludes.

New Trends In The Cloud

At first glance, it seems like moving applications to the cloud would be an easy proposition simply involving the establishment of contractual relationships with cloud providers to deliver applications. However, administrators should understand that there is more to it than that, especially in light of new emerging trends with this technology.

For example, the ever growing complexity of distributed IT environments, coupled with increasing business dependence on technology, is raising the stakes for successful service management, says Herb Van Hook, vice president of strategy for the office of the CTO at BMC Software (www.bmc.com). IT service management, Van Hook adds, is critical to handling this complexity and has matured based on years of customer experiences, knowledge of the industry, and adoption of such standards as ITIL.

Because network connectivity is so important to cloud computing, administrators considering cloud computing should take a look at their physical network infrastructures and ensure that their organizations have sufficient capacity and reliable connectivity coming into their data centers as well as between different geographical locations, says Bob

Roudebush, director of sales engineering at BlueLock (www.bluelock.com).

However, cloud computing does not mean users are limited to working 100% in the cloud. An emerging trend is the use of "SaaS and Back" hybrid applications that can be deployed as SaaS or on-premises through a browser and a native client, says Jan Aleman, CEO at Servoy. This new hybrid platform, adds Aleman, gives users the option of running their applications hosted online—on dedicated servers, virtual servers, or any form of cloud computing—or on-premises.

At the end of the day, the key is to turn the data center from a static to a dynamic environment, says Shalom. This can be accomplished by creating a service environment infrastructure where storage servers, networks, and applications are available on demand. But the main challenge for getting there, says Shalom, is the sizeable investment and the difficulties in moving existing applications to the cloud, which will require investment in middleware.

SMEs Reach For The Cloud

Progress Software's Smith predicts the largest adoption of cloud computing in

Key Points

- Systems management will increase in importance as enterprises embrace cloud computing's more complex environments.
- Hybrid cloud implementations will deliver flexibility, allowing administrators to operate on-premises or in the cloud.
- Administrators contemplating using cloud computing must understand that it is not a free pass. Sizeable investments in middleware may be required to "port" existing applications to the cloud.

practice director for unified communications and networking at Logicalis (www.logicalis.com). "Telepresence is key to getting the right data from the right person in a timely manner. Asynchronous messaging like email and voicemail will be less accepted means for communication. Instant messaging, video IM, and click to call/click to collaborate will be the required technologies to meet the demands of the SME workforce."

Network & Server Impact

One interesting effect of using IP-based voice services such as unified communications is the added stress on virtual servers and networks. Park says voice and video will require data center managers to plan for more capacity in servers and network speed—and to plan aggressively.

"Although data center communications challenges have traditionally centered around voice, the additional traffic around video and converged applications is going to create an additional order of magnitude

of traffic over the next couple of years," says Park. "Video quality of service (QoS) and virtual machines must be considered as part of the business communications plan."

Yet, Park says the answer is not necessarily adding more hardware such as network switches and more servers for virtual machines, although they can help with video requirements.

"The most important step isn't about hardware; it's actually about WAN

optimization," says Park. "Companies seeking to support voice and video should consider moving to an MPLS (Multi-Protocol Label Switching, which carries high-speed network traffic from one node to another) and WAN optimization appliances for any locations that will see significant communications traffic."

This creates a new management layer where one new service (IP voice) creates a need for another new technology (WAN optimization) to address network performance for those services. See the "Top Tech: WAN Optimization" sidebar for further information.

Planning For Expansion

No other segment is growing quite as fast as the video telephony market. No longer the purview of dedicated suites in executive conference rooms and hotels, telepresence and unified communications will become more mainstream as more companies jump on the bandwagon, Park says.

This means planning for growth in these services and preparing for the resulting infrastructure changes, says Johnson. Instead of being surprised by the expansion in video services, companies should be ready.

"If an SME is planning for [IP-based voice communication and unified communications] infrastructure upgrades and prepping their data center for these trends, they should assess their infrastructure, their IT staff, and the business needs," says Johnson. "A decision will need to be made on whether they can bring the services to their business in-house or if a trusted partner

Top Tech: WAN Optimization

According to Hyoun Park, a research analyst for telecom and unified communications at Aberdeen Group, WAN optimization is an even more important technology for handling voice and video services in the data center than the hardware and software requirements. This is because WAN optimization addresses the fundamental issue: that the infrastructure needs to be fine-tuned for quality of service to make sure that when employees use voice and video, the services are optimized and ready for use.

should supplement or source the hardware/software and engineering skills it takes to bring these offerings to their workforce."

"The combination of low bandwidth costs, availability of cost-effective VoIP solutions for the small to midsized company, lowering of voice expectations due to cell phone adoption, business benefits of unified communications, increasing demands of millennials for new communications channels, and consumer adoption of technologies such as Skype have all combined in a perfect storm to provide visibility to VoIP, unified communications, and video to the SME," says Park.

Whether that storm causes data center managers to batten down the hatches or embrace the new challenges is a matter of capacity planning, server optimizations, and openness to new services. □

Hackers Exploit Vulnerability In Windows Help & Support Center

Days after Google security engineer Tavis Ormandy made public a zero-day vulnerability within Windows Help and Support Center, hackers were exploiting the bug with what a Sophos senior tech consultant characterized as a "classic drive-by attack." Ormandy was criticized by many security professionals for only giving Microsoft five days to work up a fix for the flaw, which affects the Windows XP and Windows Server 2003 operating systems. Sophos reported a compromised Web site exploiting the vulnerability was discovered involving the use of Trojan malware. Microsoft reported that the affected Web site had been cleaned but expected more attacks in the future. Microsoft has made a Fix It tool available to resolve the vulnerability at support.microsoft.com/kb/2219475.



T-Mobile, Not Verizon, May Be The Next iPhone Carrier

There has been much debate on which U.S. mobile carrier will receive the iPhone after the AT&T exclusivity deal expires, and Shaw Wu, a Kaufman Bros. analyst, believes T-Mobile will be the winner. Shaw's argument is that AT&T and T-Mobile use the same UMTS/HSPA network while Verizon uses a CDMA network, so it would be easier to port the iPhone over to T-Mobile rather than Verizon. Shaw believes the move will happen either this fall or in early 2011. Verizon has been working on its own 4G network, so it's also possible the iPhone will debut once the new network is finished.

Broadband Funding Begins Through USDA Program

Tens of thousands of households, businesses, and community anchor institutions such as schools and hospitals will soon have access to broadband, courtesy of the U.S. Department of Agriculture's Rural Utilities Service. Through funding by the American Recovery and Reinvestment Act, thousands of jobs will be created to build networks, lay fiber, and provide Internet service. The goal is to aid rural areas in a number of ways, including giving farmers real-time crop and weather information, fostering distance learning, assisting hospitals with telemedicine, and helping rural businesses. Project organizers hope to reach 1.2 million households, 230,000 businesses, and 8,000 anchor institutions.

EMC Releases Study On Security Needs

EMC released two studies that examine log management priorities for small and mid-sized companies. One study, performed by the SANS Institute, sampled data from organizations with fewer than 2,000 employees, and the second, conducted by RSA, covered 50 midsized enterprises. The SANS survey found that 80% of respondents rank detection and prevention highest in criticality. In the RSA study, 89% of midsized organizations indicate that log management and SIEM solutions are primarily used for security operation functions, while only 54% say the primary use is for compliance.

01

2010 will occur at small and medium-sized enterprises. Organizations that are looking to get access to more computing power and business applications but don't have the capital budget to buy servers and licenses up front will be the ones that take advantage of cloud computing.

Small to midsized enterprises have the most to gain from cloud computing because it minimizes the capital expenditures required to provision their IT infrastructures, says Fujitsu's Hillier. Also, he adds, cloud computing enhances the innate agility of smaller enterprises by provisioning IT structure on-demand and enabling it to change with fluctuating demand.

In terms of management, SMEs require ease of use above all else. Thus, an important trend in the cloud computing space is the move toward centralized management,

says Kirill Davydchev, senior technical specialist at Xvand Technology (www.xvand.com). In the past, administrators had to wrangle multiple management consoles because every product featured a different management console. Now vendors are realizing this type of management is very inefficient, so there have been efforts to either integrate all management into a unified solution that would allow for a certain degree of automation or to make the product so simple to use that it doesn't require management at all aside from initial setup, says Davydchev. This management simplicity, he adds, is especially essential in cloud computing as the amount of managed servers increases.

The Future Is Now

New companies are choosing to start in the cloud rather than build out IT infrastructures from scratch, says BlueLock's Roudebush.

Existing companies are moving certain apps to the cloud using SaaS offerings, Roudebush says, adding that it may take a year or two before companies move their entire infrastructures to the cloud.

This is because the IT pros are waiting on technologies that make moving workloads between private and public clouds easier and ease the management of data centers operating in the cloud environment. Also, he adds, attorneys must work out the details behind intellectual property that is outsourced to a cloud service provider and the impact of this on subpoenas, regulatory compliance, and privacy.

Progress Software's Smith says cloud computing will become a factor for small enterprises in the next 12 to 18 months, when adoption will begin to take off. On the other hand, adoption will be smaller for medium-sized enterprises that have already invested in applications and infrastructure, so their adoption of the cloud will be more piecemeal and only happen as new needs arise or significant business growth occurs. □

Top Trend: Monitoring & Reporting

According to Bob Roudebush, director of sales engineering at BlueLock (www.bluelock.com), most organizations today don't do a good job of tracking IT systems' uptime and availability. Establishing monitoring and reporting capabilities will allow organizations to have a firm understanding of how applications perform and the amount of resources they consume so that smart decisions can be made about cloud capacity. Perhaps most importantly, the ability to monitor infrastructure, along with whatever visibility is made available by the cloud provider, will allow organizations to enforce any SLAs they may have in place, he adds.

Portable Storage

Product

CMS Products ABS-Secure



Description

The ABS-Secure encrypted external hard drive features USB 2.0 connections with capacities ranging from 160 to 640GB. Designed for optimum portability and rugged durability, the ABS-Secure weighs just 7 ounces and features the CMS DataGuard shock-absorbing sleeve, which allows the drive to sustain a shock of 190Gs while operating and 1,000Gs when not operating. ABS-Secure features 256-bit AES encryption and CMS' CE Secure Full Disk Encryption Software (which now supports 64-bit operating systems) as well as CMS' BounceBack Express Version 8.0 for backup and restore capabilities. ABS-Secure is powered by USB and spins at 5,400rpm.

- QuickRestore lets you restore individual files or folders
- Multidestination backup lets you back up to any local or mapped network drive simultaneously
- Continuous data protection
- Three-year warranty

Best For: Sensitive data storage in rough environments.

Price: \$135 (160GB); \$145 (320GB); \$169 (500GB); \$179 (640GB)

Contact

(800) 327-5773
www.cmsproducts.com

CMS Products Vault OTG



The Vault OTG encrypted flash drive uses 256-bit AES encryption to protect against prying eyes in the event of loss or theft. To increase protection, the Vault OTG supports passwords of up to 64 characters. Available in capacities of 2GB, 4GB, 8GB, or 16GB, the Vault OTG comes preconfigured for immediate use right out of the box with preloaded software and drag-and-drop functionality. To protect against threats from keyloggers, Vault OTG features a screen-displayed keyboard.

- Powered by USB
- Weighs 1 ounce
- Includes 19-inch lanyard
- Automatically locks when unplugged and requires a password to unlock
- Leaves no trace of activity on your system

Best For: Anyone who needs to use public computers but has sensitive data.

Price: \$31 (2GB); \$40 (4GB); \$60 (8GB); \$111 (16GB)

Compellent Portable Volume



The Compellent Portable Volume is designed to jumpstart disaster recovery by cutting initial replication synchronization time from months to hours without the need for dedicated high-speed data links or duplicate arrays. Customers replicate data to encrypted portable drives from a Compellent SAN via a standard USB connection and then ship or travel with the drives to a remote site. The two high-capacity external drives offer 128-bit encryption and are housed in a ruggedized case for added durability. Once the locked case with the external drives arrives onsite, the administrator simply needs to plug the USB drives into the remote SAN, and Compellent's Enterprise Manager software automatically syncs the data to the site.

- Utilizes two external hard drives preconfigured for and auto-recognized by Compellent storage
- Uses a common USB 2.0 interface
- Protects the drives with a ruggedized transport case equipped with a TSA-approved lock

Best For: Organizations looking for a cost-effective way to replicate data between sites as part of a comprehensive disaster recovery strategy.

Contact

(800) 327-5773
www.cmsproducts.com

MXI Security Stealth MXP Bio & Stealth HD



MXI Security's Stealth MXP Bio is a biometric USB drive with 256-bit AES hardware encryption that offers secure portable storage, digital identity features, and enterprise-level device management in capacities of 1 to 32GB. The Stealth HD features the same level of encryption and is available in both biometric and nonbiometric versions. The drive is ideal for organizations that need encrypted, high-capacity storage for portable storage, desktop, and OS environments and is available in 250GB, 320GB, and 500GB capacities with up to three-factor authentication. Both devices are powered by MXI Security's FIPS 140-2 Level 3-validated Bluefly Portable Security Processor.

- Onboard anti-malware and antivirus protection
- Up to three-factor authentication (biometric, password, smart card)
- Multiuser capabilities (10 different users per device)
- Waterproof, dust proof, and tamper evident

Best For: High-security data protection.

Price: Starts at \$114 (Stealth Bio) and \$300 (Stealth HD)

Contact

(650) 492-4055
www.ironkey.com

IronKey S200



Description

The IronKey S200 is a physically and cryptographically secure USB flash drive with FIPS 140-2 Level 3 validation. Used by government and enterprise customers, the S200 features hardened physical security, the latest Cryptochip technology, active anti-malware, and enhanced management capabilities.

- Tamper-resistant and tamper-evident rugged metal case
- Anti-malware capabilities in hardware designed to provide a layer of protection from malware and prevent its spread onto networks
- Includes extended-life flash memory capable of running high-bandwidth applications such as data backups, virtual machines, or bootable mobile desktops
- Enterprise Management Cloud Service for enforcing security policies, providing security and anti-malware updates, and tracking and auditing hundreds of thousands of devices

Best For: Business personnel who need a portable device to store ultra-sensitive information.

Price: Starts at \$79 (1GB)

McAfee Encrypted USB By SanDisk



McAfee Encrypted USB drives, powered by SanDisk, impose mandatory hardware-based encryption on all files, as well as password protection to safeguard data stored on company-issued drives. These USB devices are designed to help enterprises mitigate the risk of data loss by ensuring that data on the USB device remains inaccessible unless an encryption key or password is provided. McAfee Encrypted USB drives are designed to boost security defenses with automatic, device-resident malware scanning.

- Ultra-fast transfer speeds and a simple user interface
- FIPS 140-2 Level 2-certified
- Hardware-based 256-bit AES encryption
- Mandatory access control for all files with strong password enforcement
- Uses McAfee's ePolicy Orchestrator software for centralized management

Best For: Enterprises that require stringent security for their portable data.

Price: Starts at \$32

(408) 801-1000
www.sandisk.com

(888) 422-6726
www.mxisecurity.com

Processor's Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

Compiled by Seth Colaner

Iomega eGo Encrypt Plus Portable Hard Drive, 500GB



The Iomega eGo Encrypt Plus Portable Hard Drive is designed to let you take sensitive data with you anywhere. With a USB interface, hardware-based encryption (256-bit AES), and Iomega's Drop Guard Xtreme feature, the eGo Encrypt Plus Portable Hard Drive protects your data from unauthorized access and accidental drops. The 500GB hard drive is silver and includes the Power Grip band. The eGo Encrypt Plus Portable Hard Drive includes EMC Retrospect software and MozyHome Online backup (2GB free) service.

- Extra security with 256-bit AES hardware encryption
- Drop Guard Xtreme feature protects the drive when dropped up to 7 feet
- Compact size, measuring 0.75 x 3.84 x 5.57 inches (HxWxD) and 0.6 pound
- Hardware-based encryption boosts performance
- Can automatically back up your drive with EMC Retrospect and MozyHome Ultimate Online software

Best For: Rugged applications that require durability and security.

Price: \$129.99

(888) 516-8467
go.iomega.com

Iomega eGo SuperSpeed USB 3.0 Portable Hard Drive, 500GB



Iomega's new eGo SuperSpeed USB 3.0 Portable Hard Drive features next-generation USB 3.0 technology for faster data transfer speeds. The drive is also backward-compatible with USB 2.0 and features a 500GB capacity. The drive requires no external power supply, instead getting its power from the USB port on the computer. eGo drives include the Iomega Protection Suite of Internet security and backup software, which includes Trend Micro Internet Security, Iomega QuikProtect, EMC Retrospect Express Backup, and MozyHome Online Backup software.

- USB 3.0 speed
- Includes security software
- Free 2GB of storage from MozyHome
- Three-year limited warranty

Best For: Fast storage on the go.

Price: \$129.99

(888) 516-8467
go.iomega.com



Nuvol-e Nimbus Mini USB



The Nuvol-e Nimbus Mini USB comes with preinstalled encryption and compression software for simple, secure backups of your important data. The sleek Nimbus drive is designed for portability and can be plugged into your notebook, netbook, desktop, or mobile phone for fast, simple file transfers.

- Built-in 256-bit AES encryption
- Password-protected
- Up to 2:1 automatic file compression
- Multilanguage
- Schedule your backups daily, weekly, or monthly

Best For: Secure file transfers on the go.

Price: \$49.99 (8GB), \$89.99 (16GB)

www.nuvol-e.com

Olixir Mobile DataVault 3DX



The high-capacity Mobile DataVault 3DX is an easy-to-use, secure, rugged plug-and-play data storage tool. Mobile DataVault drives range in capacity from 320GB to 2TB and can be used interchangeably with Olixir's USB 2.0, FireWire, SATA, and eSATA cable interfaces. An optional 5.25-inch docking bay means the drives can also be used as hot-swappable cartridges with Olixir's chassis-based systems, which include 5.25-inch bays, desktop towers, and large-capacity 19-inch rackmount systems. The Mobile DataVault drives support Mac OS 8.6 and higher, Win2000/XP/Vista, and Linux OSes.

- Ultra-rugged portable hard drives can be used standalone with cable interfaces or in Olixir's chassis-based systems
- Can survive nonoperational shocks of up to 1,200Gs
- Can easily be repurposed, eliminating waste and maximizing ROI

Best For: Maximum storage capacity needs in rough environments.

Price: Starts at \$350

(800) 719-0595
www.olixir.com

IBM Study: CEOs Unprepared For Growing Complexity

Most CEOs doubt their ability to manage an increasingly complex business environment, according to a study from IBM. About 80% of the CEOs surveyed expect their environments to grow more complex, but fewer than half say they are prepared to handle that complexity.



The IBM Global CEO Study, fourth in a biennial series, was conducted between September 2009 and January 2010. IBM interviewed more than 1,500 CEOs, general managers, and public sector leaders from around the world. The study found that several factors, including increasingly interconnected enterprises, economies, governments, and societies, are contributing to a more complex business environment.

"Our interviews revealed that CEOs are now confronted with a 'complexity gap' that poses a bigger challenge than any factor we've measured in eight years of CEO research," the study says.

Other factors contributing to complexity are increased government regulation and technology. In the most recent survey, about 40% of CEOs cite technology as a major external factor, compared to 33% in 2004. Organizations are also uncertain about what to expect as they come out of a global recession, the study says.

"The new economic environment, [CEOs] agree, is substantially more volatile, much more uncertain, increasingly complex, and structurally different," the study says.

Turning Complexity Into An Opportunity

The IBM Global CEO study also identifies "standouts," or companies that consistently perform well and can manage complexity and also turn it into an advantage. Standout companies showed revenue growth that was six times higher than the rest of the group, but their "complexity gap" was much smaller, according to the study.

CEOs can help their organizations manage increasing complexity by following the examples of the standouts, IBM says. First, standout companies are best at showing creativity by innovating and experimenting with their business models. The most successful companies also find ways to reinvent customer relationships, according to the study. They create products side by side with their customers and include customers in core processes. In addition, the study found the best CEOs manage complexity for their organizations by simplifying operations and products and making their companies faster and more flexible.

"A critical aspect of [CEOs'] learning will be to determine which elements of complexity—for example, overcomplicated internal processes or inflexible customer interactions—are unnecessary or hinder value creation," the study says. "Likewise, they will need to identify which aspects can be harnessed for greater efficiency, innovation, or growth."

by Kyle Harpster

Terror On The Rise

How Cyberterrorism Could Affect Your Enterprise

by Christian Perry

• • •

REPORTS CONTINUE TO SURFACE of terrorist groups moving parts of their operations online, where they can use computer systems to attack not only governments but enterprises residing in target countries. However, when the average enterprise is already committing significant resources toward fending off common cybercriminals, the concern of cyberterrorism might be a passing one at most. Is that the right approach?

Key Points

- Cyberterrorists typically target financial institutions, utility companies, and Internet service providers, but they can also target other enterprises simply to steal personal information or utilize computing resources.
- Botnets are a popular method of attack for cyberterrorists, as they allow the attackers to silently infiltrate networks and recruit computers when they're needed for terrorist activities.
- Knowing both your systems and the data they contain is essential for constructing a risk management framework that will protect your organization against potential cyberterrorist attacks.

"Cyberterrorism is largely thought to be targeting financial institutions or major governments," says Patricia Titus, chief information security officer for Unisys Federal Systems (www.unisys.com). "However, recent evidence shows an escalation in attacks on all types of users and networks, large and small. Cyber attackers need to consume large quantities of resources and processing power in order to achieve a large-scale attack. Therefore, unassuming networks are being hijacked for use in these major operations without anyone's knowledge."

Further, cyberterrorists aren't interested only in stealing money, Titus says, as they're also now targeting personal information, which they can sell on open markets to finance their operations or use to falsify their own information to gain more efficient, undetected movement across the globe. At least in execution, these and other cyberterrorist activities often are closely related to nonterrorist cyber-attacks, so many enterprises are generally protected through their usual security efforts. However, the rising cyberterrorist tide should remain on the radar of enterprises because it's often well-funded and surprisingly effective at meeting its nefarious goals.

Terror Goes Digital

Although any enterprise holding data of any value is a potential target for cyber-terrorists, some businesses represent more likely targets than others. Hugh Thompson, founder of People Security (www.peoplesecurity.com) and program committee chairman for the RSA Conference, notes that cyberterrorism can also include attacks that are politically motivated with the goal of disruption, which in turn casts a wide net for potential

targets, such as power and other utility companies, financial institutions, and Internet service providers.

"There have also been several significant politically motivated attacks against companies that are not considered critical infrastructure, such as the recent Distributed Denial of Service attacks against Twitter. There are such a wide range of attack motivations—activism, politics, terror—and with tens of millions of machines as part of botnets that can target a company's servers, businesses can't afford to ignore the possibility of being attacked," Thompson says.

Despite the severity of actual cyberterrorist attacks, it's important to keep them in perspective relative to other attacks. According to Martin Lee, senior software engineer at Symantec Hosted Services (www.symantec.com), the average enterprise is under attack every day by financially motivated cybercriminals. This volume far outpaces politically motivated attacks on networked computers, Lee says, so enterprises should understand the threats they're facing and rank them accordingly. For example, he considers financially motivated cybercriminals to be the most common threat to enterprises today, while the most potentially damaging threats are those posed by malicious insiders.

Regardless of the intentions behind them, attacks used by general cybercriminals are also used by cyberterrorists. One of the most common cyberterrorist attack methods is the botnet, which infects computers and can lie dormant until it's digitally recruited to extract data, to perform DDoS attacks, or even to take enterprises completely offline, Unisys Federal Systems' Titus explains. Botnets can be particularly mischievous—Titus says that one botnet actually applied security patches to the infected machine to ensure it was healthy and ready to be used for malicious activity. She also says that the perimeter security defenses of traditional networks are usually not capable of protecting against botnets.

"Adversaries are getting much smarter and more stealthy," says Paul Kurtz, partner at Good Harbor Consulting (www.goodharbor.net). "Antivirus systems and firewalls can protect enterprises from known malicious code, but adversaries are now 'gaming' the system, devising ways to work around security features and engaging

in social engineering so users unwittingly accept malicious code."

Antiterrorist Measures

Identifying cyberterrorist activity that might be impacting your enterprise is difficult enough, but identifying it without knowledge of what you're protecting isn't a wise approach, Lee says. As such, it's crucial to know your systems, know the data you want to protect, and know where it's located. From there, you can define how systems should interact and who should have access to the data on those systems. Then you can take steps to prevent any unauthorized access or interaction. Patches and updates are also a top priority.

"All enterprises should seek to keep their systems fully patched," Lee says. "Defects in software are ruthlessly exploited by bad guys as ways of gaining unauthorized access to systems. By patching known software defects, enterprises can minimize the chances of an attack being successful. Even something as simple as ensuring that all machines have antivirus software installed [and] that it is kept up-to-date and functioning correctly can go a long way to stopping attacks and minimizing the consequences of attacks."

Although well-tuned security systems are a must in the battle against cyberterrorist attacks, Titus warns against leaning too heavily on the technology itself. For example, she says there's an assumption that an enterprise has monitoring capabilities that can pull data feeds from security devices to provide visibility into the network's health. But even these capabilities cannot compare to reliable, skilled, and talented analysts that can detect threats and protect the enterprise against attackers.

Titus agrees with Lee that it's crucial to establish a baseline of your infrastructure, including identifying critical data such as intellectual property, human resources data, and financial data—as well as where all of that data is stored. But although the mobility of data makes this task increasingly difficult, she says that proven risk management frameworks and tools can assist IT managers in tailoring their security approach based on their enterprise's business model. Titus recommends that enterprises consult the National Institute of Standards and Technology frameworks in the Special Publications found at csrc.nist.gov. □

Tips For Tackling Terror

Protecting your enterprise against cyberterrorism requires a solid security strategy that revolves around basic protection principles. Martin Lee, senior software engineer at Symantec Hosted Services (www.symantec.com), offers the following tips.

- Scan for malware and phishing threats on Web and email traffic to facilitate the rapid detection and removal of these threats before they reach end users.
- Test all systems for known vulnerabilities and ensure that any weaknesses are swiftly fixed.
- Review logging data to search for anything that is out of place and then investigate why the anomaly occurred.
- Ensure a large amount of redundancy, especially in bandwidth, on public-facing systems so that systems won't be overwhelmed by the effects of a denial of service attack.
- Frequently back up Web sites and ensure those backups can be quickly restored to counteract the effects of a successful attack.

SIX QUICK TIPS

Improving User Passwords

Create An Uncrackable Password To Keep Intruders Off Your System

by Sixto Ortiz Jr.

• • •

EVEN THOUGH TECHNOLOGY has changed by leaps and bounds since the dawn of the computer age, the humble password continues to endure as a cornerstone of computer system security. There are very few systems or applications today, if any, that don't feature the use of passwords as a means to verify identity and provide protection from unauthorized access.

But, even though passwords are such a critical element of the computing security arsenal, the fact is many users unwittingly compromise their personal and work security by neglecting to practice sound password management techniques. Read on to learn more about effective techniques for improving user passwords and buttressing the security of critical business systems.

Make It Tough To Crack

This may seem hopelessly obvious, but it merits repeating: Users who choose strong, cryptic passwords are much less likely to have their security compromised than those who simply choose their first name followed by a couple of numbers (such as the year of their birth) or some other convenient and easy-to-remember character sequence. In fact, the best passwords feature long sequences of random characters.

With today's computers, passwords that are eight characters or less are breakable by brute force in a few hours, says Slavik Markovich, chief technology officer at Sentrigo (www.sentrigo.com). So, a strong password must feature at least eight random characters, preferably more. But, herein lies the nature of the eternal password conflict: How can users be expected to constantly memorize long strings of random characters?

Markovich recommends that users create passwords using phrases from favorite books. For example, the phrase "one ring to rule them all, one ring to find them" can be used to construct the password "oR2rta0r2ft." The key is to use something that is familiar and understood to create something random and difficult to crack via a brute force attack.

Leverage Technology

An overwhelming aspect of password security for many users is the simple fact that nowadays, just about every application, Web site, or system a user needs access to requires some sort of password. Long gone are the days when enterprise users only had to remember three or four passwords; now, it is not at all uncommon to find even casual computer users juggling numerous

passwords. Thankfully, there are a number of technologies that can ease the password burden for enterprise users.

An example of these technologies is SSO (single sign-on). With SSO, users are required to create and remember only one password that is then used to grant access to whatever systems they need access to. A key advantage to this approach, says Phara McLachlan, CEO of Animus Solutions (www.animussolutions.com), is it limits the number of passwords users have to remember.

Another approach is via the use of password managers, says Owen Rubin, a private security specialist. These are applications that generate random secure passwords and then lock them in an encrypted file that is protected via a password set up by the user. Thus, users can generate as many strong passwords as needed yet only need to keep up with one password.

Other technological solutions include the use of single user repository stores—such as Active Directory—for password management and two-factor secure ID authentication, McLachlan says.

Establish Policies

James Litton, CEO of Identity Automation (www.identityautomation.com), says administrators must require strong passwords and enforce their use throughout the organization using technology. Users, Litton says, must be educated to understand the fact that "strong" does not have to mean "hard." Administrators should encourage users to use words that mean something to them—but not the names of family members or pets—and use a technique to replace certain letters with symbols or numbers so the user can more easily remember the password, he adds.

The key, Litton says, is to find a technique for generating passwords and stick to it. For example, a user may always capitalize the first or last letter of a word, or choose to always capitalize the vowels.

Litton also recommends that administrators encourage users to treat passwords like they treat their underwear: change them often and don't leave them lying around. Even though there is plenty of debate over the effectiveness of requiring regular password changes, administrators must require that users regularly change passwords. This is effective because change will thwart the efforts of an intruder who has gained access to a compromised system, Litton says.

Deny The Defaults

Many applications automatically create accounts during their installation process, and in some cases provide default passwords,

Markovich says. In their haste to quickly deploy a system, he adds, administrators will often accept these defaults, leaving the door wide open for anyone with experience installing these tools to gain access to a system using the default username/password combination.

So, policies should be in place that explicitly prohibit the use of these defaults during system installation, Markovich says. And, he adds, vulnerability scanners should be used to test the underlying databases of critical applications for default accounts.

Even then, critical applications may not be entirely safe. Even though some applications require that administrators define a minimum password length and require the use of numbers, special characters, or mixed cases, many do not. Markovich recommends that vulnerability assessments be run regularly for applications that are used to store sensitive data and don't force the use of strong passwords, so weak passwords that are vulnerable to compromise using dictionary-based and brute-force techniques can be identified and corrected. □

Best Tip:

Discourage Sharing

Sharing is a commendable quality, but not when it comes to access to critical enterprise systems. Even though most internal IT governance policies (and many regulatory standards) prohibit the use of common passwords for access to critical systems, there are always cases where this is done in enterprise environments, says Slavik Markovich, chief technology officer at Sentrigo (www.sentrigo.com). Administrators should fix these when found, but only after ensuring that changing passwords won't interrupt access, automated or otherwise, to key applications.

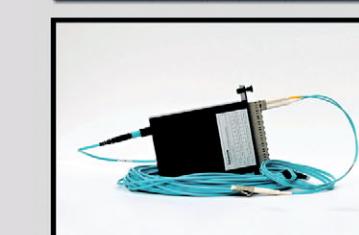
Easiest To Implement:

Balance Policies With Password Strength

George Hess, CEO and co-founder of art of defence (www.artofdefence.com), says strong passwords should contain upper- and lowercase letters, numbers, and non-alphanumeric characters (symbols such as "!", "%", etc.). However, policies requiring the creation and use of strong passwords should strike a balance, Hess says. Asking users to change passwords frequently will cause frustration and cause users to choose weak passwords or write them down. Strong password policies, if implemented carefully, prevent users from choosing weak passwords and causing user account security breaches.

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Cat6E Enhanced Cable

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BONUS TIPS

■ **Use encrypted password backups.** Randy Abrams, director of technical education at ESET (www.eset.com), says users should back up their passwords using an encrypted file. There are applications in the marketplace,

such as password managers, that provide this capability.

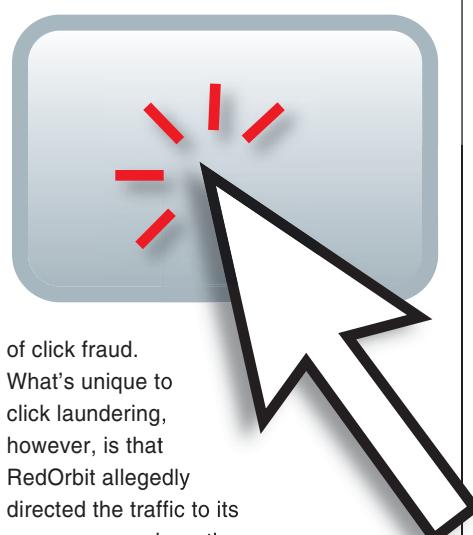
■ **Don't use personal information in passwords.** Kevin Haley, director of Symantec Security Response (www.symantec.com), says users

should avoid personal information, repetition, sequences, and dictionary words when creating passwords. Using information like this will only make it easier for hackers to guess your password and gain access to your system.

Microsoft Cracks Down On Click Laundering

Microsoft has an established history of filing suit against companies engaged in digital forms of fraud. Adding to this pattern, the computer maker has recently filed separate suits—one against RedOrbit and the other against a group of 20 anonymous defendants—alleging that the accused are involved in a type of click fraud Microsoft has dubbed “click laundering,” designed to garner increased clicks on click-based ads.

RedOrbit, which was once an approved site on Microsoft’s AdCenter service network, is accused of using botnets and parked sites to dramatically increase the number of clicks on the ads on its site, which is typical



of click fraud. What’s unique to click laundering, however, is that RedOrbit allegedly directed the traffic to its own servers, where the company removed the source information that traced back to the botnet and replaced it with code that made it seem that the traffic legitimately came from the approved site rather than a botnet.

Microsoft first noticed the bogus clicks when the number of clicks increased inordinately within a two-week period. Normally, hits from RedOrbit.com average about 75 per day, but they shot up to 10,000 per day in early 2009. RedOrbit denies “engaging, assisting in, or condoning” click laundering, but Microsoft wants its advertisers to know it stands behind its loyal network of companies, so it’s quashing any foul play.

Click Fraud Vulnerabilities

True click fraud perpetrators aren’t doing anything unique when they use botnets and parked sites to increase clicks, but rather it’s the manipulation of the information in the traffic stream to make it appear as if it’s flowing differently than tips off the victims, according to James Quin, lead research analyst for Info-Tech Research Group.

There are ways to prevent click laundering from undermining online advertising. “The best way to defeat bot-based fraud is to require some form of interaction that a bot cannot complete, such as typing in the letters contained in a graphic,” Quin says. “Since the bot can’t read the graphic, it can’t complete the click.”

These methods are not always feasible, however. “These types of systems impose a cost upon the human user that can negatively impact click rates [because of] increased effort due to multiple steps,” he says. “The next best line of recourse is vigilant monitoring as occurred in [the Microsoft] case. A jump in clicks from 75 to 10,000 per day should be notable.”

by Joanna Safford

Pinpoint & Prevent Insider Security Threats

Keep Your Corporate Data Safe

by William Van Winkle

• • •

ACCORDING TO THE 2007 E-Crime Watch Survey, organized in part by the Threat and Incident Management Group at Carnegie Mellon’s CERT (www.cert.org), more than half of those impacted by a cybersecurity event were victims of an insider attack. When an organization has to deal with the “enemy within,” how can such problems be found and avoided in the future?

Detection

Before managers can discover insider threats, they need a better idea of where to look. There are several types of insider risks, with the most common being unintentional exposure of sensitive information. Within intentional insider threats, though, there are three main categories: IT sabotage, theft or modification for financial gain, and theft or modification for business advantage.

IT sabotage is often characterized by the stereotypical disgruntled employee, especially one who has just been fired, misusing network access with the intent to harm a specific individual or the company’s assets.

“Many times, the insider has planted back doors into the organization to get into systems from his home and be able to take them down remotely,” says Andrew Moore, senior member of technical staff at CERT’s Software Engineering Institute. “As you might guess, you need a fair amount of technical ability to be able to install a back door in a system and enter through it later on. These are often database administrators or people with technical skills.”

IT saboteurs often work alone, which can make them harder to spot. Tell-tales often take the form of abnormal and/or aggressive behavior. The cybercrimes they commit often take the form of malware (14% of insider attacks, according to the 2010 CyberSecurity Watch Survey), non-aware spyware (15%), and disruption of data or systems (10%).

Unlike saboteurs, IT thieves are in it for the money, whether for personal monetary gain or for a business advantage. Most are men, according to Moore, and about 29%

of insider cases involve salespeople stealing intellectual property they’ve developed, such as client lists and trade secrets, and taking it to a new business. About half of theft cases involve groups of insiders working together. The 2010 survey shows that 15% of insider jobs involve theft of proprietary information, and 16% involve theft of intellectual property. Most insider thieves use their own accounts for access and do their dirty work during business hours.

Solutions

As a fraud example, the CERT team points to a lottery agency insider who stole almost \$63,000 over a year and a half through buying tickets and then modifying the agency’s database to show those tickets as winners. Normally, this insider would have been tasked with investigating the anomaly, but the person happened to be on vacation. Upon returning, the culprit was put on administrative leave but not before deleting history logs and having a colleague delete backup tapes critical for subsequent prosecution. According to James Quin, lead research analyst at Info-Tech Research, this illustrates a key procedural risk.

“You need to set accounts up for appropriate segregation of duties, so one person can’t do everything in a transaction,” says Quin. “Ideally, you want one person putting in a request, a second person fulfilling the request, and a third auditing the request after the fact. At the very least, you want the auditing person kept separate from those doing requests.”

Also note the key role of the vacation in the lottery scam’s discovery. Many theft crimes come to light because of required PTO, and the person covering the criminal’s job role discovers traces of the insider’s malicious actions. No single employee should ever hold lone control over information or responsibilities critical to a business’s operation. When this happens, that employee is able to extort the company.

Some prevention methods are reiterated constantly, such as not having the same login for many different systems and not writing passwords down. However, Quin advocates monitoring as a key method for nipping crimes in the bud.

TOP TIPS

- Criminal insiders often cause trouble before and leading up to termination. If termination seems likely, audit that user’s activities for at least a few days before the firing.
- According to CERT’s (www.cert.org) Andrew Moore, “The insiders that were the most vulnerable were the ones with some sort of financial difficulty in their lives.
- This suggests that maybe employers need to consider employee assistance programs. If those employees can be helped in a legitimate way, that may prevent these crimes from going forward.”
- Investigate DLP (data leakage protection) systems, which monitor data movement within a network and help prevent unauthorized data use.
- Identify the key IP of your organization. Have nondisclosure agreements in place with employees and make sure those agreements are understood. Nondisclosure agreements won’t stop insider crimes, but they will make such crimes easier to prosecute.

“Every system has some form of syslog monitoring,” he says. “You’ve got to turn it on [and] then you’ve got to review those logs. You don’t need to spend money on a third-party monitoring system that provides real-time alerts. If someone just dumps the logs on a weekly basis and makes sure nothing inappropriate is happening, that’s good.”

Key Points

- Use encryption and similar means to make sure that when accidental breaches occur, any data leaked is useless to an outsider.
- Proper logging and monitoring will help unearth anomalies in system usage and lead to discovery of the crime.
- Minimizing the “risk surface” of sensitive data and systems will help thwart most insider crime opportunities. Cut user permissions, system access, and the number of systems containing sensitive data as much as possible.

Sam Curry, CTO of EMC’s security division, RSA (www.rsa.com), believes that minimizing an organization’s “risk surface” is key to minimizing insider threats, and this applied even within his own company. RSA found that it had sensitive data on about 300 systems. Admins consolidated this number down to 30. Because many users still had access to these systems, RSA encrypted the data and implemented access controls so that only about one-quarter of the employees could read that data. (Reduction of user privileges to the barest minimum is a common tactic in preventing insider risks.) The access patterns of those employees were then logged and monitored for anomalous access patterns. Finally, these staff members had their access patterns limited, such as only being able to log in from specific systems at specific times.

“That’s the job: efficient reduction of risk to an acceptable level,” says Curry. “You want to be able to define the risk surface and specify exactly where risk still exists so that someone with sovereign authority for the company can sign off on it and say, ‘Yes, that’s acceptable.’”

Note RSA’s use of encryption. Info-Tech’s Quin points out that, especially for tape backups and mobile devices, encryption should be mandatory. The \$50 to \$100 per seat required to implement encryption is merely another OPEX cost, and encryption virtually eliminates the dangers associated with accidental insider breaches.

Ultimately, the real objective in thwarting insider security risks is making sensitive data more expensive for bad guys to get over time, according to RSA’s Curry.

“The real measure of security is how expensive it is to break something,” says Curry. “If you can drive that up enough, it’s not profitable to steal, and most of the outsiders paying those insiders will go away.” □

Enterprise-Grade Security

AEP Networks Offers Network Security Solutions That Are Fault-Tolerant & Affordable

by Robyn Weisman

• • •

GIVEN THE PLETHORA of companies out there that sell security, encryption, and communications networking products for the SME, the average data center manager must find it daunting to choose the right solutions that integrate well with his network; provide secure, seamless, and fault-tolerant access to confidential

can let you know exactly what's going on," he says.

AEP Networks' wide selection means that small to midsized enterprises can pick and choose the solutions that best fit their enterprise networks. AEP develops its solutions to work for major government and security agencies around the world, as well as for financial institutions and other verticals whose livelihoods

member countries. "Our products play [in] police forces, fire brigades, government administration, foreign offices, intelligence gathering, and probably the lower end of military administration," says Donnellan. "We place a big emphasis on our accreditations and how we manage the devices remotely."

AEP's Series E IPsec VPN solutions focus on endpoint security and policy administration. "It enables access by satellite, 3G, [or] whatever protocol is available. Our central key management platform is centrally managed through our own CA (Certification Authority)," says Donnellan, adding that this platform uses that CA to certify public keys, revoke certificates, and eliminate the need for a local key handling. In addition, the CA module lets IT staff rekey thousands of devices in a matter of hours and cryptographically segregate lost or stolen encryptors from a secure network.

AEP Networks' hardware security modules act as PKI (Public Key Infrastructure) enablers. "It does key generation [and] key storage and is the only FIPS Level 4 accredited product on the planet," says Donnellan. And the company's Series A Secure Application gateway, which allows Web-based secure

access to business applications within the virtual private network, also is available as a virtual machine.

A Single Solution

Donnellan points out that many of today's enterprises have mixed telecom environments in which not every branch office is using the same types of communications systems—or even the same conduits. For example, remote offices in many rural areas in the United States may still be using copper conduit rather than broadband fiber, and an enterprise may not be inclined or able to extend fiber to all of these areas. AEP Series T Edge devices can handle the coexistence of copper and fiber in a centrally managed mode so that no one is forced to embark on major upgrades to have proper telephone and data services, and enterprises using it can have a holistic view of its traffic and performance.

AEP NETWORKS

(877) 638-4552
www.aepnetworks.com

- AEP Networks specializes in a variety of secure, reliable network security solutions designed to meet the needs of small to midsized enterprises.
- The company offers benefits such as pay-as-you-grow scalability and certification from a number of standardization institutions.
- "We can enable you to be more aggressive in your Web site communications and access and be assured you're in a secure environment," says Pat Donnellan, CEO of AEP Networks.



Communication is Your Business

information; and are able to do so at an affordable price.

However, Somerset, N.J.-based AEP Networks (www.aepnetworks.com) offers its customers a level of security and reliability so impressive that its products are used worldwide by financial, government, and other enterprises that require top-notch security and communications capabilities and appreciate the modular approach that the company takes with its solutions.

Understanding SMEs' Needs

According to CEO Pat Donnellan, AEP Networks understands that although SMEs are seeking out value and ease of management in their communications systems, they are also seeking the same standards that larger enterprises expect. "Just because you're an SME doesn't mean you can compromise on your standards of network security or you can take your Web site for granted in any way, shape, or form in terms of who accesses it and how well it's pinned down," Donnellan says. "The whole logic of what we're about is that we can enable you to be more aggressive in your Web site communications and access and be assured you're in a secure environment."

In other words, AEP Networks can make your SME a better enterprise, Donnellan says. "Many companies have learned the hard way about how to deal with these issues [of knowing] what's actually going on from a network security and [communications] standpoint, and we

are tied to the effectiveness of their secured communications.

Government-Level Security

AEP Networks' VPN SSL solutions are regularly sold to a number of civil government agencies, particularly in the UK and Belgium, and have been recently accredited to all other European Union

information; and are able to do so at an affordable price.

However, Somerset, N.J.-based AEP Networks (www.aepnetworks.com) offers its customers a level of security and reliability so impressive that its products are used worldwide by financial, government, and other enterprises that require top-notch security and communications capabilities and appreciate the modular approach that the company takes with its solutions.

AEP Networks Featured Products

Product	Description
Series A AVE Secure Application Access Virtual Edition	A virtualized enterprise SSL VPN that provides fault-tolerant, secure remote access of applications. Follows a "pay-as-you-grow" approach and can be used with as few as five user licenses.
Series E IPsec VPN	IPsec-based IP security gateway that provides source authentication and data confidentiality across mixed environments. Has government-level assurance and accreditation from CESG and the European Council, among others.
Series M MWatch	A Windows-based SNMP network management application that provides visibility into the network and can monitor and report on the status of all components within the network.
Series K (formerly Keyper) Hardware Security Module	A FIPS 140-2 Level 4-certified appliance-based security platform that generates, manages, and stores cryptographic key material.
Series T Edge Device	Edge device that uses a single telecommunications platform that can aggregate and channel a wide range of two-way voice and data streams—including legacy traffic—over radio, satellite, or terrestrial means. Uses vadOS, which is optimized for voice and data throughput and provides granular network control and scalability.

In addition, AEP's communications solutions can handle multiple services streams, including satellite, 2.5G and 3G, ISDN, leased lines, and packet radio, among others. "We provide the telemetry solution based on what is available and then layer a secure VPN on top of that so that you have sensitive information being transmitted in a secure fashion," Donnellan says.

Virtualization In AEP's Future

Donnellan sees virtualized versions of AEP Networks' solutions coming out over the next year or so. The company is just beginning to push out its AVE Secure Application Access Virtual Edition, and he senses that a majority of SMEs will migrate to an arrangement of using cloud computing services for remote access management. "The variable costs that we can offer through subscription mode, based on utilization rather than fixed costs, will be of significant relevance," Donnellan says.

Donnellan points out that the ability to manage the virtual organization of contractors and temporary employees as well as permanent employees is critical to an enterprise environment, as is the ability to generate accurate reports. "More workers are working in different [areas] and need more in the way of mobility," he says.

"Being able to manage the complexity of employees, machines, and customers in a secure fashion drives more revenue and makes [an SME] a more customer-friendly organization, and that is the most important value that [we] provide," Donnellan says. P

Unified Communications For SMEs

Siemens OpenScape Office MX Delivers UC Capabilities To Member Insurance Agency

by Seth Colaner

• • •

WHEN ILLINOIS-BASED Member Insurance Agency's headquarters changed offices, it was faced with a decision: move its aging phone system or install a fresh, updated one at the new location. After getting quotes on how much it would cost to move the old system, the company decided it would be better financially to start from scratch and implement a new UC (unified communications) system after the move.

After careful consideration, Member Insurance decided on the OpenScape Office MX from Siemens (www.siemens-enterprise.com), in large part because of the agency's past experiences with Siemens. "We had a 10-plus-year-old Siemens system," says Wendy Marks, IT support and LAN analyst for Member Insurance Agency. "We have been a long-time Siemens customer, even before we bought the last system 10-plus years ago, and so when we were looking for a new system, I didn't even go out looking around for anybody else, quite honestly."

Siemens OpenScape Office

A platform designed to offer small to medium-sized companies easily accessible, secure, and reliable unified communications via Microsoft Outlook.

"We think it's a great product. It's a lot less steps. It's a lot less hassle. Our customers are much happier," says Wendy Marks, IT support and LAN analyst for Member Insurance Agency.

(800) 310-6308

www.siemens-enterprise.com

Marks says that the Siemens systems she's supported in the past—at Member Insurance and for other offices—were easy to learn and came with exceptional support, affirming the decision to move forward with OpenScape Office MX. "I do maintain some other offices in other states and stuff and we have some other vendors. I support them and have never been too happy with them, so I kind of like to stick with Siemens," she says.

Improving Customer Service

OpenScape Office MX is a unified communications platform designed specifically for small to medium-sized companies. It can scale up to 150 users and runs through Microsoft Outlook using the myAgent for Outlook toolbar, which lets users easily view other users' presence, set up conference calls, and set criteria for when and how to be contacted.

Built on Siemens' OpenSmart architecture, OpenScape Office MX is secure and easy to use, designed to work in the background to deliver strong capabilities while not interfering with a user's work. Features include integrated SIP-based voice and conferencing services, voicemail, messaging, and a multimedia contact center. Additionally, OpenScape Office MX has built-in WLAN, IP-DECT, and cellular capabilities so it works over broadband, digital, or analog lines.

The deal-making feature for Member Insurance Agency, however, is its presence capabilities, which Marks says solves a seemingly simple but nagging problem. "In an office environment, ours specifically, you can't see each other," she explains. "The receptionist who's answering the bulk of all calls cannot see any of us sitting in our cubes or [at] our desks, and so if she

didn't have some kind of visual software, she would have no idea who was at their desk, who was out sick today, who was at lunch, who was on a phone call—she had no way of knowing without the software because she can't physically see any of us."

This, Marks says, could lead to a decline in the quality of their customer service. "We didn't want [our receptionist] holding on to customer calls because she couldn't

have much less wasted time, generate more information, and deliver better customer service overall.

Configuration & Implementation

For Marks, the ease of setting up and implementing OpenScape Office MX was welcome. "We were in the process of an office move [when we were installing OpenScape Office MX], so it was a lot going on—not just the phone system."

The Siemens installers and trainers, she says, were tremendously helpful. Even though she was well-versed and experienced in what they were implementing, she occasionally had questions. "If I didn't understand something, they would explain it to me," she says. "We had some problems that were not Siemens-related but that were phone line-related; they helped me talk to the phone repair people."

As a company that focuses on providing optimal customer service itself, Member Insurance Agency appreciates Siemens' user support. "One of the reasons we've stayed with Siemens this long is the customer service and the tech support, and if something goes wrong, I've never had a problem getting help and a resolution to it," Marks says. "To me, being an IT person

SIEMENS

find someone to give [them] to," she explains. "In our minds, our customers are obviously the most important thing to us, and we didn't want them waiting any amount of time that they didn't have to."

OpenScape Office MX vastly improves the agency's customer service because the person handling incoming calls has a complete and current view of each employee's presence. This capability enables the receptionist to find the name, extension, and presence of a person who is best qualified to take the call, so instead of spending time trying multiple times to find someone to speak with the caller, the receptionist can transfer the caller to the correct party, transfer them directly to voicemail, or accurately let the caller know when the person they need to speak with will return to the office.

For example, if Employee X is set to return from lunch at 1 p.m. or is in a meeting that is scheduled to end at 3 p.m., the receptionist can see that information and relay it to the caller. The result is that calls

myself, that's huge, because I've had a couple vendors that I absolutely dread calling because they don't ever call you back, and Siemens is not one of them."

Marks also appreciates how Siemens handles its sales with customers. Before the office move, Member Insurance Agency had already paid its maintenance renewal and signed contracts to have Siemens move the agency's old equipment to the new office. However, "when we bought the new system, they ripped up all [those contracts] and gave us the money back. No hassle, no problems—it was very easy and smooth," Marks says.

On the whole, Member Insurance Agency is a satisfied long-time customer, dating back a quarter-century and two Siemens phone systems ago. Now, the company is glad to have OpenScape Office MX to deliver UC capabilities to its headquarters. "We think it's a great product, and I'm already considering and thinking about budgeting for putting it in other offices," Marks says. "That's how happy we are." □

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THREE QUESTIONS

Manage & Track Software Goals & Quality

Borland's Application Lifecycle Management Offerings Help IT With Testing & Change Management

by Daniel P. Dern

• • •

TO AN IT ADMINISTRATOR, managing software development can mean the difference between software that does what you want, both in terms of tasks and quality, and software that falls short of your expectations.

Borland Software (www.borland.com) offers open ALM (application lifecycle management) products and associated services and training that specifically address these requirements. Its offerings include Silk, which is a unified testing suite for software quality assurance, control, and management; CaliberRM, which is an enterprise software requirements management tool to help software teams with collaboration, impact analysis, and communication; and StarTeam, a software change and configuration management tool for use in both centralized

and geographically distributed software development environments.

Borland was acquired by Micro Focus (www.microfocus.com) about a year ago as part of Micro Focus' efforts to become a leader in the software testing industry. "We [at] Micro Focus help companies modernize the applications running their business,"



says Peter Mollins, director of product marketing at Micro Focus. This includes updating applications to respond to new business requirements, as well as shifting applications to new platforms—for example, "moving them from mainframe to Unix/Linux, Windows, or the cloud without disrupting the current business logic," Mollins says—and other improvements, such as modernizing the interfaces.

■ **What are the biggest IT-related issues facing today's small to midsized enterprise?**

"People tend to go off the rails," says Steven Dykstra, product marketing director for Borland's Silk product line. "When you decide to invest in a given application, it's to solve a task. Projects usually start in the definitional stage—defining what the system is going to do. And that's where people usually miscommunicate and have ambiguity. You need to get better definitions in order to get better outcomes."

Software testing is another area that can reduce a program's quality and alignment to goals, according to Dykstra. "Many companies do software testing only at the end. That's risky. Defects build up, and you don't know how many or where they are."

■ **What should Processor readers know about your company's products?**

Uses for the Borland ALM products span the application development life cycle, including requirements definition and management, UML (Unified Modeling Language) usage, software test management, functional testing, performance testing,

component and unit testing, and software change and configuration management.

"Any organization that wants to test software can use Silk," says Dykstra. "CaliberRM is used in enterprise IT, and StarTeam is used by development teams to manage change throughout software delivery life cycles. The Silk line is also used to test packaged applications, as well, and Caliber to capture requirements for packaged applications."

Dykstra continues, "The Borland products are intended for use on a broad range of applications. That includes Web-facing applications like Citrix-delivered ones, packaged applications like ERP, and internal-facing applications. And we serve not only enterprise IT for business, finance, government, and other organizations, but also for software vendors and for companies who provide SaaS and other hosting."

In terms of Micro Focus, now Borland's parent company, "We are working on enabling the ability to move applications to the cloud," says Dykstra. "Borland Silk lets you put a load on applications running in the cloud [in order] to understand their performance characteristics."

■ **What makes your company unique?**

"We are one of the only companies that focuses exclusively on applications—not just ones you are building now, but the ones you have built in the past, making sure those assets are optimized, as well," says Dykstra.

"We can not only help put loads on your applications to confirm they are tuned properly but can also help diagnose when there are scalability or performance problems," he says. □

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Office 2010 & SharePoint 2010

Upgrading Isn't An All-Or-Nothing Proposition

by Kurt Marko

• • •

UPDATES TO MICROSOFT OFFICE come like clockwork about every three years, so 2010 brings a new release. From the original hodgepodge of productivity applications, Microsoft's suite has evolved into a portal to its two backend collaboration servers, Exchange and SharePoint, which are released on the same schedule. Yet this year's editions seem to exist more for Microsoft's benefit, facilitating the migration of its productivity and collaboration applications to online SaaS (software-as-a-

application features, the Web applications, and new file formats.

The litany of changes and additions include the inclusion of OneNote in all versions of Office, enhanced data presentation features (Excel's Sparklines and data Slicer), easier image and video editing directly within Word and PowerPoint, a Conversations view and new thread maintenance tools in Outlook (much like Gmail threads), the Outlook Social Connector (providing social network information for email contacts), and improved consistency and customizability of the Ribbon across applications.

New In SharePoint 2010

SharePoint 2010 continues the evolutionary theme, building on major enhancements from the 2007 edition. SharePoint 2003 to 2007 "was a dramatic change," says Forrester analyst Rob Koplowitz. "That was a change from a basic portal server with lightweight content management

apps for enterprise users, but they serve as a supplement for home, traveling, and smartphone users. Hickernell says that because enterprises still need Office and SharePoint licenses to unlock all the Web Apps' functionalities, many may question their benefits; yet he sees a couple scenarios in which Web Apps make sense. Employees using home computers for office work may find the Web versions sufficiently full-featured to obviate the need for a dedicated, company-owned laptop or virtual desktop. He also believes the Web Apps are suitable for jobs requiring only basic Office functionality for consuming rather than creating documents, such as call center agents, receptionists, data entry clerks, and production floor operators.

While Office Web Apps are primarily supplementary to the standalone product, SharePoint can now be completely outsourced to an external, online service provider as a shared, multitenant SaaS offering or a dedicated hosted instance.

of these variables produce different upgrade advice (see the "Four Office Upgrade Scenarios" sidebar).

For companies with a maintenance agreement that haven't already upgraded to Office 2007, the move to 2010 is a no-brainer, but for those who've already made the switch, Hickernell advises caution, not rushing a 2010 upgrade. Enterprises without software support—a common expense cut during the last few years of tight IT budgets—have a tougher decision.

Those that upgraded to Office 2007 before the axe fell should stay put; however, Hickernell advises organizations still on legacy Office versions to re-evaluate the 2010 product against its open-source and online competitors (such as OpenOffice.org and Google Apps) and then either bite the upgrade bullet or establish a new standard for productivity and collaboration apps.

SharePoint upgrade recommendations depend on how deeply SharePoint is embedded in a company's business processes.

"[Microsoft] kind of went down the shopping list of popular consumer social software," integrating essentially every popular social software feature into the product.

- Burton Group's Craig Roth

capabilities to a broad suite of middleware offerings. Everything was different in MOSS [Microsoft Office SharePoint Server] 2007, and 2010 builds on that same value proposition." He highlights improvements to SharePoint's collaboration options, application development environment, search performance, and content management features. "Everything gets a little bit stronger," Koplowitz says.

Burton Group analyst Craig Roth says SharePoint's enhanced collaboration features, such as blogs, wikis, and social search, are extensive. "If it was there before, it's been improved," Roth says. He notes the addition of features such as activity streams (essentially news feeds for social networks); microblogging (an internal service similar to Twitter); a Facebook-like "wall" for various postings; and tags, ratings, and social bookmarks (similar to Delicious). "[Microsoft] kind of went down the shopping list of popular consumer social software," Roth says, integrating essentially every popular social software feature into the product.

SharePoint 2010 also improves the software's backend plumbing, enabling its deployment as a multitenant SaaS offering like Microsoft's own SharePoint Online. Roth highlights its greatly improved backend safety and reliability. "They've done a lot to cap or prevent runaway processes and queries from taking over the machine [or allowing] bad templates and pages [to] crash the site. [Microsoft has also] improved failover [and] patch management—all of the things you expect from a more mature system."

Software Or Online?

Office and SharePoint are now both available as online editions. With Office, the Web Apps won't replace the standalone

Burton Group analyst Guy Creese believes the SaaS solution will primarily appeal to SMEs or subdivisions of large enterprises, while the hosted offerings, with their support for most native SharePoint features, target large enterprises.

By Hickernell's reckoning, the Office upgrade decision depends on the version currently deployed (2007 vs. 2003 and earlier) and the status of software maintenance; in other words, whether licenses are eligible for a 'free' upgrade. The four permutations

When using SharePoint as an information portal, Roth recommends validating the existing information environment and rearchitecting or reorganizing where necessary before upgrading—it's unwise just moving a chaotic hodgepodge of data and collaboration sites to a new system. Before exploiting other SharePoint services, such as social networks, CMS (Content Management System), or search, he advises first developing an overall Microsoft backend server strategy. □

Four Office Upgrade Scenarios

Deciding whether to upgrade to Office 2010 depends upon whether an enterprise has already moved to Office 2007 and if it has maintained a Microsoft software maintenance agreement and therefore already "owns" the upgrade.

	Own Office 2010 already	Do not own Office 2010 already
At Office 2003 or below	I: Just Do It <p>Challenge:</p> <ul style="list-style-type: none"> • No support • Abandonment by third parties <p>Action:</p> <ul style="list-style-type: none"> • Upgrade to Office 2010 now 	II: Start Over Now <p>Challenge:</p> <ul style="list-style-type: none"> • No support • Abandonment by third parties • Acquisition cost <p>Action:</p> <ul style="list-style-type: none"> • Evaluate Office 2010 and competitors to select new standard
At Office 2007	IV: Don't Rush It <p>Challenge:</p> <ul style="list-style-type: none"> • Too soon to realize full ROI from Office 2007 upgrade project <p>Action:</p> <ul style="list-style-type: none"> • Reassess each year • Consider hybrid 2007 and 2010 Web Apps deployments • Adopt OOXML formats 	III: Start Over Eventually <p>Challenge:</p> <ul style="list-style-type: none"> • Too soon to realize full ROI from Office 2007 upgrade project • Acquisition cost <p>Action:</p> <ul style="list-style-type: none"> • Reassess each year • Evaluate Office 2010 and competitors to select new standard • Adopt OOXML formats

* % OF RESPONDENTS IN EACH SCENARIO FROM A RECENT INFO-TECH SURVEY, WITH SOME OVERLAP DUE TO MIXED DEPLOYMENTS

SOURCE: "MAKE THE DECISION TO UPGRADE TO MICROSOFT OFFICE 2010;" SLIDEDECK BY TIM HICKERNELL, INFO-TECH RESEARCH GROUP; APRIL 6, 2010.

iPad & The Enterprise

Will iPad Join Laptops & Smartphones In Your Enterprise?

by Sue Hildreth

• • •

THE iPad IS EITHER a game-changing device that will find useful application in the work world or a cool toy that won't be breaking any major ground in corporate IT in the near future. For consumers and Apple aficionados, the iPad is quickly becoming a must-have item. In just the first 80 days since the launch, Apple sold 3 million worldwide.

But it has a way to go before it may become a bona fide productivity tool for most mobile employees. The iPad shares the iPhone's operating system, but unlike the iPhone, the iPad has no camera or phone capabilities, making video conferencing and conference calls problematic. At 9.6 by 7.5 inches, its screen is certainly roomier than a cell phone's for email and calendar applications or for browsing the Internet, but not quite big enough to churn out the serious work one can do with a laptop. Perhaps most problematic of all, though, is the lack of support for Flash or a physical keyboard, although separate keyboards are available.

"On the positive side, software developers are working hard to create applications that would enable iPad in the enterprise."

- IDC's David Daoud

Nevertheless, where there's a will there's a way, and employees will undoubtedly find reasons to use it for work. Those enthusiasts are aided by the growing array of personal productivity and business applications available for the iPad, making it possible for iPad users to find at least one or two work-related activities they can do on their iPads.

Apps Are Key To iPad's Business Value

But will it work in the enterprise? The experts are mixed on how well the iPad really supports common enterprise apps such as Exchange and Microsoft Word. The iPhone OS, which iPad uses, supports IMAP4- and POP3-enabled server applications, according to Apple's product literature, and supports Microsoft Exchange ActiveSync for Exchange Server. The iPad also supports retrieval of contacts from LDAPv3 corporate directories and CalDAV calendar servers, although it can't currently send invitations. The updated iPhone OS, iOS4, does support invitations. A version of the new OS is set to hit iPads this fall. Multitasking is also coming to the iPad with the new OS, but for now, it's a limitation for mobile workers.

But the iPad isn't made to be a good enterprise work tool, says David Daoud, director of PC and Green IT at IDC, but to be a consumer media consumption device.

"The laptop and cell phone are productivity tools, but the iPad is really mostly a media consumption product. That's why it hasn't been advertised as a business-class product. It's designed for going online, checking Facebook, checking email. But if you want to use it for enterprise work, for productivity suites . . . it's difficult to see how it fits," says Daoud, noting that Apple is unlikely to want to make the iPad fully competitive against its own, much higher priced laptops. "On the positive side, software developers are working hard to create applications that would enable iPad in the enterprise."

IT managers faced with the decision of whether, or how, to support iPads in the workforce should first consider which of its enterprise applications, if any, are supported for the iPad. The utility of the iPad, experts say, is highly individual and depends on what Apple and its partners offer in software.

The availability of work-related apps that can run on the iPad is helping mobile employees come up with justification for their having an iPad. The number of personal productivity and business applications is increasing rapidly. It comes with a calendar, email, and Apple's own office suite of Pages, for word processing; Numbers, a spreadsheet; and Keynote, for creating presentations.

Among the third-party business applications, there are the obvious travel, news, and stock tip apps, as well as voice recording, alternative note and spreadsheet software, telnet, expense management, database viewer, business intelligence/analytics viewer, task manager, and network management

Growth Of iPad & Media Tablets

According to IT research firm IDC, media tablets such as the iPad are a growing, if still new, market. This year, sales of media tablets worldwide will reach 7.6 million, and IDC forecasts that will increase to 46 million in 2014, a growth rate of more than 57%.

applications (so IT types can check on the network). Additionally, point-of-sale applications allow small businesses to take credit card sales via an iPad or iPhone.

"I saw one guy at a conference who ran his presentation off his iPad, and there were lots of other people using them," says Craig

Key Points

- The iPad is really mostly a media consumption product, experts say.
- The utility of the iPad, experts say, is highly individualized and depends on what applets are available.
- Though appealing to individual workers, there is currently no rush by corporate IT to invest in iPads.

Mathias, principal at Farpoint Group (www.farpointgroup.com), an advisory firm specializing in mobile and wireless technologies. "If you don't mind the small screen and lack of [attached] keyboard, there's nothing inherent in the device that would preclude it being used by companies."

Don't Throw Out The Laptops

However, no one is saying they expect the iPad to actually replace either laptops or smartphones, at least not in the foreseeable future. So, support for these mobile devices will still be needed.

"The iPad is a one-trick pony. It does one particular thing, which is to run an applet. It might be you have a job where you have three or four critical needs and if you can find an iPad applet for it, then you can use it," says Bob O'Donnell, vice president of clients and displays for IDC. "But let's be honest. This isn't going to be your only device. It's an add-on."

That's the assessment shared by other consultants and analysts, who say the executives they've spoken with seem to be enamored with the iPad's look and feel but have no plans to ditch their iPhones or laptops in favor of it. It's a third device and, for now, the one that is unnecessary from a corporate IT department point of view but hugely appealing for many individual workers, including IT professionals.

"It has appeal for certain vertical markets, but it can't replace anything because you can't make phone calls over it, and it's too big to fit in your pocket," says Michele Pelino, principal analyst at Forrester Research.

Although the iPad is going to find a place serving niche applications in some industries and the personal productivity needs of many corporate executives, it's not likely to be a common corporate work tool any time in the near future, experts say.

"People will buy a couple to try them out," IDC's O'Donnell says, "but it'll be a while before you'll see any major corporate investments." **P**

Business Strategies Are Top Concerns For SMEs, Survey Says

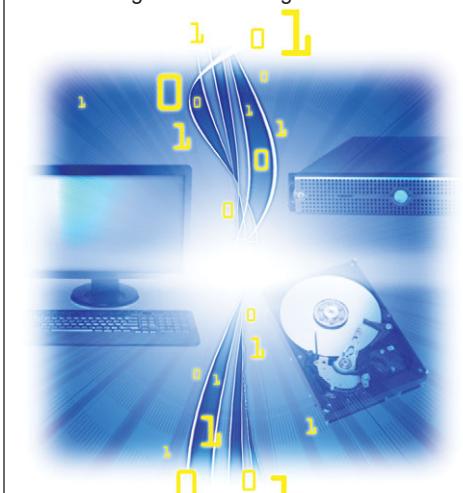
Technology companies are most concerned with successfully marketing and developing new products and services, according to BDO's 2010 RiskFactor Report for Technology Businesses. Increased competition and consolidation in today's technology industry tied marketing and development in the top spot, with 94% of respondents calling it a concern, while failure to properly execute corporate strategy was named by 68%. In 2009, only 27% of companies cited the execution of corporate strategy as a concern.

Aftab Jamil, a partner at BDO and leader of its technology practice, says technology organizations are still reeling from the hits they took during the recession and are trying to make up the difference through intense focus and applying the adequate resources needed to move forward.

"Business strategy has always been important," Jamil says. "But in this tight economic environment that we're living in, I think that risk is becoming that much more profound because there is not a lot of room for companies to fail in that. Obviously, the market is not going to be very forgiving if you do fail."

Security A Factor, But Not As Much

Although security has gotten a lot of attention recently, it was not in the top 20 concerns cited by the 100 largest U.S. public technology companies included in the study. Jamil says the concern for security and privacy breaches was listed 23rd by technology companies, but it has jumped several spots in the past few years, and he says he wouldn't be surprised if it were in the top 20 next year. Many companies don't cite data breaches as a concern, Jamil says, because they probably already have taken some actions to protect themselves. However, Jamil says those precautions might not be enough.



"There is a little bit of a gap between what businesses' and companies' aspirations are in regards to data security and the status of their readiness, because probably all of them have privacy policies that are communicated to their stakeholders, their employees, and their customers," Jamil says. "But despite that, there are other studies that demonstrate that a fair number of them still have data breaches, which to me means there is a gap between what they aspire to be and their current status of readiness."

Jamil says the survey overall reflects many of the same concerns from the past but notes others that have increased. For example, concerns about the labor force more than doubled, while concerns over meeting government regulations have also increased. Much of it has to do with the economy, Jamil says, and that isn't likely to go away in the next few years.

by Tessa Warner Breneman

Servers

Product

Appro 1U Tetra GPU Server



Description

The new Appro 1U Tetra integrates two CPUs based on the latest AMD Opteron processors and four GPUs based on the latest Nvidia M2050 GPU computing. It delivers the highest density at the best price-to-performance ratio to support technical computational applications.

- Four GPUs based on Nvidia Tesla M2050
- Two CPUs based on AMD Opteron processors
- Up to 1,792 GPU cores for more than a teraflop of precision performance
- Cluster management options and choice of Linux or Windows OS

Best For: High-performance computing and government research.

Contact

(800) 927-5464
www.appro.com

Appro GreenBlade System GPU Expansion Blades



Working in tandem with the Appro GreenBlade System, the Appro GPU Expansion Blades come in a 5U form factor and are configured as CPU/GPU combinations supporting five dual-CPU server blades with five dual-GPU expansion blades per system. The system offers configuration flexibility, density, reliability, and energy efficiency with affordable mix-and-match compute blade options.

- Two GPUs per blade server based on Nvidia Tesla M2050
- Two CPUs per blade server based on AMD Opteron or Intel Xeon processors
- Five blade servers per system for a total of 10 CPUs and 10 GPUs in a 5U form factor
- Cluster management options and choice of Linux or Windows OS

Best For: Energy research, government research, universities, finance, and bioinformatics.

Egenera BladeFrame pBlades With Intel Xeon 5600 Processors



Egenera's converged-infrastructure pBlades are diskless, anonymous, and interchangeable, enabling automated allocation, repurposing, and failover for any blade. The blades support both physical and virtual workloads, and their unique design enables a data center to pool processing assets and associate configurations with the pool instead of assigning individual servers to specific applications.

- New two-socket blade based on Intel Xeon 5600 Series processors, supporting up to 144GB of RAM
- Fully compatible with all three generations of BladeFrame systems, allowing customers to easily upgrade existing systems
- Manage mission-critical data centers, control data center costs, and improve availability and responsiveness with Egenera's PAN Manager Software

Best For: Dense, mission-critical physical or virtual workloads requiring high availability and disaster recovery.

Price: Starts at \$4,990

(508) 858-2600
www.egenera.com

Product

HP ProLiant DL380 G7



Description

The HP ProLiant DL380 G7 rack-optimized server delivers up to a 20:1 consolidation ratio, reducing floor space and improving data center capacity. Integrating the latest Intel Xeon 5600 processor technology with server management technologies such as HP Insight Control, the HP ProLiant DL380 G7 offers a balanced systems architecture that enables clients to maximize server performance for virtualization, business intelligence, and database workloads.

- Improves management productivity while reducing operational expenses with HP Insight Control software
- Simplifies server setup and power and thermal optimization as well as embedded system-health monitoring to lower administration costs with iLO3 (Integrated Lights-Out 3) Advanced technology
- Optimizes power and thermal management using HP Thermal Logic technology and the "Sea of Sensors" feature, which automatically tracks thermal activity through a collection of sensors placed strategically throughout the server
- Enhances energy efficiency with HP Power Advisor for accurate configurations based on real-time power data to prevent over-provisioning

Best For: Data centers that require increased flexibility and space.

Price: Starts at \$2,429

Contact

(800) 888-0262
www.hp.com

HP ProLiant DL385 G7



The HP ProLiant DL385 G7 server optimizes virtualization, enabling organizations to deploy more virtual machines and maximize the returns on their investments. Based on AMD Opteron 6100 processors, the HP ProLiant DL385 G7 delivers a 27x performance-per-watt increase over previous generations.

- Delivers a 23:1 consolidation ratio, decreasing the amount of virtual servers
- Optimizes power and thermal management using HP Thermal Logic technology and the "Sea of Sensors" feature, which automatically tracks thermal activity through a collection of sensors placed strategically throughout the server
- Reclaims lost data center power and cooling with HP Insight Control and Dynamic Power Capping, which enables customers to cap the server's power use while increasing workload capacity
- Reduces resolution time by 20% with secure remote support for HP servers and storage through HP Insight Remote Support software

Best For: Virtualized environments that require high performance to handle demanding workloads.

Price: Starts at \$2,349

IBM BladeCenter PS700 Express Power7 Series



Available in three configurations—the PS700, PS701, and PS702—the IBM BladeCenter Express Power7 is designed for 64-bit applications. The processor-based blades feature 64GB, 128GB, and 256GB memory options and use Intelligent Cache technology to maximize cache access to each core.

- Consolidates on IBM BladeCenter Power Blades and virtualizes applications to better utilize resources and amplify efficiency
- Simplifies your deployment with flexible configurations that make it easy to implement the right system and the ability to run AIX, IBM, and Linux operating systems simultaneously
- Features an intelligent system design that includes multiple layers of redundancy and reliability combined with advanced availability tools to help you stay up and running
- Helps drive down cost, reduces risk, improves energy efficiency, and enhances flexibility

Best For: Enterprises of all sizes needing high-performance servers that are easy to deploy.

Price: Starts at \$7,088 (PS700), \$9,788 (PS701), or \$18,888 (PS702)

(866) 883-8901
www.ibm.com

This Product Spotlight highlights new server options available from leading manufacturers.

Compiled by Joanna Safford

Egenera Dell PAN System



The Dell PAN System from Egenera is a preintegrated converged infrastructure system that simplifies IT infrastructure and reduces operational costs across both physical and virtual servers, all using industry-standard Dell blades and standard Ethernet. The system reduces the overall I/O component count, simplifies how servers are configured, and reduces complexity needed to provide mission-critical high availability and disaster recovery.

- Comprehensive n+1 high-availability blade failover and disaster recovery for both virtual and physical workloads
- Built-in I/O virtualization and converged networking based on standard onboard Ethernet components
- Failover features eliminate need for complex clustering software

Best For: Production-grade IT and pod-style cloud infrastructures requiring high availability.

Price: Starts at \$99,000

(508) 858-2600
www.egenera.com

Fujitsu PRIMERGY CX1000



The PRIMERGY CX1000 is an innovative scale-out server infrastructure platform designed with centralized power and front-to-top cooling. The sealed back on the racks allows the PRIMERGY CX1000 to be installed in a very small footprint to eliminate the cool aisles in the data center and maximize density. No fans are needed on the servers as the rack handles all the cooling needs with a trademarked top-of-rack Cool-Central fan unit. The servers themselves use the latest Intel Xeon 5600 Series processors and deliver excellent performance.

- Unique scale-out platform delivers 38 servers in an optimized rack
- Centralized server cooling eliminates fans on the servers and lowers energy costs
- Low-footprint rack with vertical cooling uses space more efficiently
- Powerful servers run on dual Intel Xeon 5600 Series processors

Best For: Enterprises that need a platform for cloud, hosting, and high-performance data center applications.

(800) 831-3183
us.fujitsu.com

HP ProLiant DL165 G7



The HP ProLiant DL165 G7 server offers a significant performance boost and enhanced power savings over previous generations. Delivering a 23:1 consolidation ratio, the HP ProLiant DL165 G7 server with AMD Opteron 6100 Series processors increases operational efficiencies, meaning the server pays for itself in as little as two months.

- Delivers a 27x performance-per-watt increase over previous generations
- Optimizes power and thermal management through HP Thermal Logic technology and the "Sea of Sensors" feature, which automatically tracks thermal activity through a collection of up to 32 smart sensors placed strategically throughout the server
- Reclaims lost data center power and cooling with HP Insight Control and Dynamic Power Capping, which enables customers to cap the server's power use while increasing workload capacity
- Reduces resolution time by 20% with secure remote support for HP servers and storage through HP Insight Remote Support software

Best For: Environments where memory capacity and performance are paramount.

Price: Starts at \$1,449

(800) 888-0262
www.hp.com

NEC Express5800/R320a Fault Tolerant Server



The NEC Express5800/R320a FT server provides 24/7/365 availability for your most important applications. This turnkey solution protects critical data during both planned and unplanned outages. NEC customers experience less than five minutes of downtime (with some experiencing zero) per year at a lower TCO over the life of a server compared to traditional clustering solutions.

- Two-socket quad-core Intel Xeon 5500 Series processors deliver fast processing performance
- Five-nines (99.999%) availability to meet the most stringent SLAs
- Operational simplicity with the support of leading operating system providers, including Windows and Red Hat, and support for virtualization

Best For: Companies in need of continuous availability and disaster recovery solutions.

(866) 632-3226
www.necam.com

Supermicro SuperServer 6016T-6RFT+



The SuperServer 6016T-6RFT+ is a powerful iteration of Supermicro's 1U rackmount UIO servers. The 6016T-6RFT+ offers high-performance and green computing features such as increased memory capacity of up to 192GB in 18 DIMM slots, redundant Gold Level (93%+) power supplies, onboard 6Gbps SAS with hardware RAID 5, dual 10 Gigabit Ethernet LAN, and integrated IPMI 2.0 management. Leveraging a variety of UIO adapters, Supermicro UIO systems can significantly improve network throughput as well as application performance.

- The right expansion slot features one PCI-E 2.0 x8 (low profile, 5.5-inch length); the left slot features two PCI-E 2.0 x8 (full height/full length)
- LSI 2108 6Gbps SAS with hardware RAID 5
- Dual 10 Gigabit Ethernet LAN with 2x SFP+ connectors
- IPMI 2.0 plus KVM with dedicated LAN

Best For: Enterprise mission-critical applications, data centers, and HPC clusters that require high-performance, high-density, and fault-tolerant storage solutions.

Price: Starts at \$1,800

(408) 503-8000
www.supermicro.com

Supermicro TwinBlade



As the newest addition to Supermicro's SuperBlade family, the innovative TwinBlade doubles the number of dual-processor compute nodes per 7U enclosure to 20, allowing for up to 120 DP servers per 42U rack for a dense, cost-effective solution. Based on the SBI-7226T-T2 blade supporting the latest Intel Xeon 5600 Series processors, this system delivers unprecedented performance per dollar and per square foot. Available with dual 40Gbps QDR InfiniBand switches, this optimized blade solution also features industry-leading 94% power supply efficiency.

- 20 DP (Intel Westmere and AMD G34) nodes in a 7U enclosure
- 128GB ECC-registered DDR3 per DP node
- Dual 40Gb InfiniBand, 10GbE, and 8Gb FCoE switches
- Dual 1/10Gb Layer 2/3 Ethernet switches
- Centralized remote management via IPMI 2.0 or KVM over IP

Best For: High-performance computing in data center, enterprise, and cloud computing deployments.

(408) 503-8000
www.supermicro.com

Data Center Cleaning Service Providers

Company

Controlled Contamination Services



Description

Specializing in working with data centers of all sizes, Controlled Contamination Services can clean the most sensitive components to rid your data center of fine particles, residue buildup, and other contaminants. Professionals will clean server rooms with the latest micro-cleaning techniques. Controlled Contamination Services performs background checks on their own employees to ensure your facilities and equipment are in the right hands.

- Services for UPS rooms, computer rooms, and network control centers
- Proper cleaning materials will reduce electrostatic charges and protect sensitive environments
- Cleaning services also disinfect raised floor areas and command centers
- Will remove dust that air filters can't catch

Best For: Data centers in need of sensitive equipment cleaning.

Contact

(888) 263-9886
www.cleanroomcleaning.com

Data Clean



Data Clean takes care of all-purpose cleaning, including areas such as cleanrooms, laboratories, and test chambers. The company targets exterior hardware, top-of-floor, underfloor plenum, post-construction, subfloor sealing, and disaster recovery cleaning. In addition, Data Clean can provide consultations regarding zinc whisker removal.

- Can clean just about any room, including data centers, computer rooms, and cleanrooms
- Use of HEPA-filtered vacuums to remove microparticles
- Specialized cleaning agents remove dirt from tile and carpeted surfaces
- Services backed by the Data Clean 100% Satisfaction Guarantee

Best For: Data centers that need a detail-oriented cleaning.

Data-Tec Systems



Data-Tec Systems specializes in servicing a variety of IT-related facilities, including computer rooms, server rooms, print facilities, MDF rooms, item processing rooms, and even general office areas on raised flooring. Data-Tec Systems has been providing maintenance services since 1991 and can care for equipment, tile, subfloor, and access floor cleaning as a complete package. Data-Tec Systems employs trained technicians who know how to manage delicate IT equipment while cleaning data center rooms.

- Periodic computer room exterior shell cleaning
- Access floor tile surface cleaning with pretreated, environmentally safe cleaners
- Subfloor tack cloth wipe-down
- Access floor installation and replacement

Best For: Data centers that utilize multiple rooms.

Contact

(888) 263-9886
www.dataclean.com

(888) 595-6422
www.data-tecsystems.com

Company

ProSource Mission Critical Services



Description

ProSource Mission Critical Services offers contamination and ESD control services that consist of multilayer, time-sequenced maintenance plans and contamination cleaning for subfloor, raised floor, equipment surface, and ceiling areas. Subfloor encapsulation includes an epoxy coating application to prevent subfloor plenum vapors and dust. Additionally, Team ProSource's ESD control services cover antistatic floor finishing; Pro-Tek Anti-Static Floor Finish inhibits static buildup.

- Annual and semiannual service options
- Customized plans are available for different facilities
- Raised floor surface cleaning features Pro-Tek and Microfiber Flat Mopping System
- Airborne particle count sampling uses laser particle counters to control the amount of particulate matter in the data center

Best For: Data centers that require extensive and frequent maintenance from top to bottom.

Contact

(888) 247-0986
www.team-prosource.com

PTS Data Center Solutions



PTS Data Center Solutions cleans all operating systems after data center construction is finished. Focusing on what's above and below raised floor data centers, PTS Data Center Solutions pays attention to the details, including equipment wipe-downs, antistatic cleaning, and ramp landing waxing. Because regular data cleaning and maintenance is a must, PTS Data Center Solutions recommends regular data center sanitation to preserve the life of the data center interior, exterior, and underbelly.

- Subfloor encapsulation to eradicate concrete powdering
- Vacuuming removes dust, dirt, and other pollutants
- Use of machine scrubbing for high-pressure laminate raised-floor surfaces
- Crews will take precautions to understand what's required for cleaning an active data center environment

Best For: Frequent, thorough, and regular maintenance of the full data center.

Sterile Environment Technologies



Sterile Environment Technologies is a national leader in data center cleaning that brings cleanroom-level protocols to data centers, computer rooms, server farms, and other sensitive critical and high-tech environments. SET3 can clean data centers of all sizes that require cooling efficiency, maximum uptime, and healthy air for employees. In addition, Sterile Environment Technologies is a highly sought-after consulting and services firm that can audit your facility's needs and provide specific services such as belt debris, zinc needle, and Halon/FM200 remediation services; onsite interior electronics/tape/motherboard decontamination; antistatic subfloor surface sealing; and tacky mat provisioning.

- Provides cleaning services for subfloors, server cabinets, racking, access floors, antistatic wax surfaces, open ceilings, ceiling plenums, and more
- Highly trained and experienced managers and technicians
- Cleanroom-approved chemicals and equipment to ensure the long-term safety and health of your environment

Best For: All critical environments that follow Federal 209E and ISO 14644 standards.

Contact

(866) 787-3271
www.ptsdcs.com

(407) 935-0620
www.set3.com

Processor's Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

Compiled by Joanna Safford

GCA Services Group



GCA Services Group does more than simply clean your data center; it offers a host of facility maintenance programs suited for the needs of individual data centers. GCA Services also offers custom Green Cleaning to ensure the health and safety of occupants while ensuring that it uses the most environmentally friendly methods available.

- Services adhere to cGMP techniques, IEST Federal Standards, and ISO Cleanroom Operations Standards
- Maintains bio-pharmaceutical, semiconductor, aerospace, bio-safety, chemical, defense, nanotechnology, and optics environments
- Sterile environment cleaning includes decontamination, disinfection, gown room management, lab support services, and more
- The Green Cleaning program provides custodial effectiveness assessments, sustainable cleaning processes, and certified sustainable chemicals while complying with GREENGUARD and offering Green Seal-compliant products

Best For: Environmentally conscious data centers.

(800) 422-8760
www.gcaservices.com

Pegasus Cleanroom



Specializing in designing and implementing a maintenance program for data centers of any size, Pegasus Cleanroom Services seeks to enhance mission-critical environments by cleaning and protecting data room assets. Pegasus Cleanroom Services can take care of data processing, call center, command center, Web hosting, colocation, and telecom departments. Additionally, Pegasus provides a host of standard data center cleaning services, such as general cleaning, access floor cleaning, subfloor cleaning, and equipment surface cleaning.

- Offers environmental sampling and reporting
- Disaster recovery cleaning available
- ISO testing/room certification
- Antistatic floor care and monitoring
- Develop your own personally scheduled plan twice a year, quarterly, or daily

Best For: Data center administrators who value personally developed cleaning schedules.

(858) 444-2290
www.pegasuscleanroom.com

Plenum Cleaning Services



Plenum Cleaning Services cleans Tier I, II, III, and IV data centers in accordance with ISO 14644 standards without introducing any liquids or scrubbing machines that require liquids. Plenum Cleaning Services pretreats microfiber cloths and flat mops with a specially designed nonresidue antistatic cleaning solution and uses ULPA-filtered frequency-suppressed vacuum cleaners.

- Improves the static dissipation properties and prolongs the condition of the high-pressure laminate subfloor
- Lowers cooling costs by reducing the air density and improving the air quality by removing 99.999% of dust, pollen, mold, bacteria, and any airborne particles with a size of 0.12 micron or larger
- Prolongs the lifetime of hardware and equipment by maintaining optimal operating conditions
- Free estimates

Best For: Preventing costly downtime related to thermal shutdown as a result of components overheating because of dust and debris buildup.

(480) 285-1603
www.plenumcleaning.com

Spec-Clean



The Spec-Clean maintenance program features continual maintenance that's based on your budget requirements and scheduling convenience. Spec-Clean performs cleaning inspections, precleaning vacuuming, and interruption-free hardware moves. Exterior hardware cleaning includes microfiber hand cleaning for server racks, CRAC units, PDUs, hardware, and other standard equipment. Spec-Clean also provides both top of raised floor and underfloor cleaning, stringer and pedestal cleaning, specialized carpet maintenance, and zinc whisker remediation.

- Complete sanitation of exterior hardware, plus chairs, windows, and office equipment
- HEPA vacuuming takes care of dust on exterior cabinets, monitors, and flat surfaces
- Client walk-throughs ensure that you're covering every detail
- Low-foam water and ammonia-free carpet extractor offered for carpet cleaning

Best For: Data center managers who like detail-oriented deep cleaning.

(203) 885-0174
www.specclean.com

Specialty Cleaning Services



Specialty Cleaning Services can effectively clean data centers, while also taking care of cleanroom, industrial lighting, acoustical ceiling tile, and post-construction cleaning. Offering five basic services, Specialty Cleaning Services uses HEPA-filtered vacuums, lint-free dust cloths, and sterile cleaning agents to complete commercial cleaning tasks such as exterior hardware cleaning, top-of-floor cleaning, underfloor plenum cleaning, above ceiling cleaning, air sampling, and environmental reports.

- Heavy-duty cleaning for post-construction facilities
- Cleanroom sanitation for large facilities
- Water-based, nontoxic cleaning materials for acoustical ceiling tile
- Services are available for scheduled intervals throughout the year

Best For: Data centers that want detailed, hands-on professional cleaning services.

(303) 750-2532
www.specialtycleaningservices.net

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is now on Facebook
and Twitter!

facebook

twitter

Follow us at
<http://twitter.com/processorpub>
or search for "Processor"
on Facebook.

U.S. Government Sues Oracle

The U.S. Department of Justice has filed a lawsuit against Oracle for allegedly overcharging the government by tens of millions of dollars. The government awards Oracle and other vendors General Services Administration contracts, which state that the government will receive discounts equal to or better than those offered to the companies' most favored customers. The government's lawsuit, which was filed in a district court in Virginia, states that Oracle found ways to give deep discounts to some of its customers without offering them to the government. Paul Frascella, a former Oracle employee, filed the suit under the False Claims Act in 2007, and the government joined his case April 2.

DHS Questioned On Cybersecurity Readiness

The U.S. Department of Homeland Security is under analysis by U.S. lawmakers, who believe that the DHS may not have the necessary resources to protect the nation against cyberattacks. Lawmakers' concerns include issues about the quality of employees the DHS is able to recruit and granting the DHS additional authority to let it force other companies to change cyber defense strategies. Between 2006 and 2009, cyber attacks rose 400%, and many agencies feel that protecting against cyber threats hasn't become a priority. There has been particular concern over the U.S. Computer Emergency Readiness Team, because despite permission to hire about 60 people to aid in defending federal civilian agencies, more than 40 of the positions have not been filled.

EDS To Pay \$460 Million Settlement

EDS has agreed to pay British Sky Broadcasting Group \$460 million to settle a lawsuit. EDS was sued by the group in 2004, alleging EDS failed to create and implement a CRM project in 2000. In the lawsuit, British Sky claims that EDS misrepresented its company in order to be hired and made negligent representation before signing the letter of agreement. The original CRM contract was worth \$109 million.

RIM, Motorola Announce Settlement

BlackBerry manufacturer Research In Motion and mobile phone maven Motorola have reached an agreement to settle all outstanding litigation between them. The companies recently announced the settlement involving suits over wireless email and technologies such as 4G, 802.11, 3G, and 2G. RIM will pay Motorola an undisclosed sum in addition to royalties henceforth, according to the announcement. However, RIM says that it doesn't expect the amount of payments to Motorola to have a "material impact" on its current and future operating results. The settlement also includes a multiple-patent transfer and cross-licensing agreement.

Open Source Growing

Windows use is sliding while Linux adoption grows, according to the Eclipse Community Survey 2010. Eclipse is an independent not-for-profit developer community that aims to support open-source products and services. When asked about their primary operating system for software development, 33% of developers said Linux, which is up from 20% in 2007. Windows was the primary OS for 58.3% of developers (down from 73.8% in 2007), and Mac OS X improved from 3.5% in 2007 to 7.9% in 2010.



Moving Toward Managed Services

Is It Right For Your Enterprise?

by Jean Thilmany

• • •

THERE'S LITTLE DOUBT that the use of managed services is increasing. According to CompTIA's Annual SMB Technology Trends Study, small and midsized businesses are set to invest two to three times as much in managed services this year as compared to 2009.

Rather than buy or build IT applications, such as onsite storage or backup and recovery systems, many SMEs increasingly opt to outsource to managed services vendors. These vendors provide enterprises with the software (and even the hardware, in some cases) and maintain these services, taking away the hassle factor in the process.

"If you have a business that has IT systems—like an email server, a file server, and a firewall—a managed service provider will manage that with remote support, remote monitoring, offsite backup, and email security for a fixed price per month," says Dave Johnson, who serves as vice

Key Points

- Managed services make sense—from a cost perspective—for most enterprises that employ fewer than 50 people.
- Shop around for a managed services provider that meets your needs, and be sure to review the contracts of any potential providers.
- To determine if a managed services provider is cost-efficient, compare the cost of maintaining hardware and software over a three-year period in-house with the cost of using a provider.

if we're down for 15 minutes, it doesn't cost us tens of thousands of dollars," says Steve Bandler, the company's chief operations officer. "A lot of times if our people have a technical problem, they're not here in the office. So we use these remote providers to log in and detect and diagnose a problem," he explains.

"Your company shouldn't decide to outsource whatever it is you are known for if it's important to the day-to-day operations and unique."

- MSPAlliance's Charles Weaver

president of technology advisers at The Fulcrum Group (www.fulcrumgroup.net).

A benefit to this method is that the service provider takes responsibility for the application. That's why small businesses that don't have a large IT staff often seek managed services, says Charles Weaver, president of MSPAlliance (www.mspalliance.com), an association of managed services providers. He explains that IT departments don't have unlimited budgets and therefore don't have the resources to hire experts or the staffing capabilities to monitor and manage all aspects of IT 24/7.

Although there are advantages to moving toward managed services, there are certain pitfalls IT managers need to consider, as well. One drawback is the manager will experience a loss of control over the application. Also, Weaver explains that an enterprise should avoid relying on a managed service that is pertinent to the core of its business function.

"Your company shouldn't decide to outsource whatever it is you are known for if it's important to the day-to-day operations and unique," he says.

Smaller Is Better

Analytics Operations Engineering, a 25-person company that provides operations consulting services, uses a managed services provider for email and Internet security, data servers, and disaster recovery. "Our IT seats aren't transaction-based, so

Generally, it makes sense for enterprises with fewer than 50 people to go with managed tools for the majority of their IT applications, says Jim Lippie, president of Staples Network Services by Thrive (www.thrivenetworks.com), a managed services provider. These smaller enterprises are hard-pressed to make use of one full-time IT staffer, Lippie explains. On average, a 50-person enterprise will spend about \$36,000 per year on managed services, which includes an Exchange, domain, and file server; remote backup; and possibly a BlackBerry enterprise server to run wireless devices, Lippie says.

The managed services provider installs tools into those environments to monitor the servers and resolve issues before they can cause problems, he says. An enterprise of the same size may have to budget between \$50,000 and \$70,000 annually for a single IT staffer to perform the same tasks.

"But once you get over 50 people, it can make sense to have a full-time administrator with managed services augmented," Lippie adds. That's because IT personnel at smaller enterprises are hard-pressed to keep up with and know all aspects of every application used within the enterprise, says Carl Hillier, director of strategic marketing for infrastructure services at Fujitsu America (www.fujitsu.com/us). Using a managed services provider for

some applications, typically backup and storage, helps take the slack off the IT department in these cases.

What To Look For

Enterprises must view bringing in a managed services provider with a strategic eye, and Hillier offers some tips for getting the most from your investment. He suggests making decisions from a long-term perspective. "You have to think of what you'll need in the future as well as the present," he says. "You may be looking at data center hosting because you've reached the boundaries of current capacity. But you'll need to see if your managed services provider can grow with your capacity moving forward."

He also advises reviewing the terms of a contract before choosing a provider. Vendor services vary. Backup management and various tasks may or may not be included. And support may be unlimited or on the clock with a pool of prepaid hours, he says.

To determine whether a managed services provider is right for your enterprise, Johnson suggests looking at the cost of a potential application you want managed over the course of three years. "If the three-year cost is close to the hardware, software, and labor you'd use, you should go the managed service[s] route," he says.

"With managed, it's typically easier to predict costs because you're taking advantage of economies of scale," he adds. □

Not A Good Fit?

Managed services are not the way to go for all enterprises. Dave Johnson, vice president of The Fulcrum Group (www.fulcrumgroup.net), explains the types of enterprises that should avoid these types of services for all or parts of their facilities.

For starters, he says those enterprises that have a high requirement for support should not consider managed services. "Maybe they're in financial service or have 24/7 business operation and needs resolution to a problem within 30 minutes," he says. "A managed service[s] provider typically can't do that, and if [it claims it] can, you'd have to be suspicious."

Another not-so-good candidate is an enterprise that heavily relies on email—perhaps they broadcast emails from their own servers. These enterprises may not be a good fit because providers often offer 1GB mailbox space and charge for extra mailbox storage. "If you're paying extra for extra storage, you have to factor that in, you may be paying a lot more than you thought you would," Johnson says.

And owners of very small businesses, those with only three or four people on staff, may want to outsource all aspects of IT and go the completely hosted route.

'Greening' The Data Center

Add Some Teeth To Energy-Saving Measures

by Bruce Gain

• • •

THE EPA REPORTED a few years ago that data centers in the United States consumed about 60 billion kWh (kilowatt hours), or about 1.5% of all U.S. electricity consumption in 2006. Since then, the EPA says data center power consumption is on track to double by 2011 to more than 100 billion kWh, for a total energy bill of \$7.4 billion annually.

However, data center managers are not powerless to reverse this trend and are often in the position to use technology to slash power consumption while boosting server and network efficiencies. Here are some ways to make your data center more environmentally efficient, which, if applied on an industry-wide scale, would offset the EPA's

Best Tip:

Use Nature's Air

It sounds almost too good to be true, but for some data centers, ambient air coolers and humidifier controls are not even necessary during most of the year when outside air can be used for cooling. During cold days in the fall and winter in most areas in the United States, for example, why not just devise a system to pipe in cool air from outside to maintain temperatures and humidity levels within the ASHRAE standard guidelines? Such a scenario offers major environmental benefits, of course, in addition to electricity costs saved.

The possibility of using outside air is increasingly feasible, while data centers exist today that are designed to run 90% of the year with no mechanical cooling, says Bill Kosik, energy and sustainability director for critical facilities services at HP (www.hp.com). "This is a next wave [in data center cooling]," he says. "The [outside] temperatures, as well as the humidity outside, are a big, big part of saving energy for cooling."

Most Practical Tip:

Put Memory Modules Back Into The Market

Memory modules are often replaced and discarded. Unfortunately, many modules end up in landfills and add to environmental waste. However, as an alternative, memory modules can be sold to third parties that then sell the components for further use. "Data centers are always upgrading the memory modules in the server racks, and the excess memory that is left over may sit in a closet [or end up later in landfills]. If that memory is sold as a [working component], it can be reused, and the money from the sale could be used for projects lacking budgets at the corporation," says Jeff Bittner, president of SMS Memory Module Assembly (www.smsassembly.com). "This is a greener way of disposing of the memory. If [one] waits too long, the memory will become obsolete and end up in a landfill or recycled before its time."

less-than-optimistic predictions about data center power consumption in the United States. In addition to covering ways to reduce power, some of the tips show how data centers can be more self-contained or reduce their environmental footprints in other ways.

Think Future

Some new applications that are supposed to make data centers "greener" might seem unusual from the outset, but they offer promising results and could merit serious consideration in the future. For example, HP has experimented with using energy that cow manure releases to power large data centers. The HP researchers say a farm of 10,000 dairy cows can produce enough manure to power a 1-megawatt data center as well as meet other power requirements for the farm.

The researchers have also demonstrated that heat released from data centers can be used, when combined with cow manure, to generate methane gas, which in turn can serve as a potential power source. The ability to apply the excess heat from the data center to manure to produce more energy in itself represents "the key thing" compared to just using cow manure for data center energy, says Bill Kosik, energy and sustainability director for critical facilities services at HP (www.hp.com). "This is like the Holy Grail in data centers for what to do with the waste heat," Kosik says.

Still, it will be a while before farmers and data centers have access to affordable infrastructure to make such a project happen, Kosik says. "To a certain degree, this system does not represent a huge practicality yet," he says.

Another example of using alternative energy sources that can be applied in the future include the use of geothermal energy from a volcano to power turbines that then generate electricity for the data center, which is already being done in Iceland, Kosik says.

"There are no fossil fuels used or CO₂ emissions [associated with geothermal energy]," Kosik says. "There are also huge geothermal resources all over the United States."

Use CFD Modeling

Although it's often considered an advanced tool for many small to medium-sized enterprise data centers, CFD (computational fluid dynamics) modeling can go a long way to ensure that hot and cold air channels are flowing in the directions they should so that ultimately more efficient airflow management will translate into power savings and more ecologically friendly practices. "A cooling assessment, specifically a [CFD] analysis, can help data center managers leverage the current cooling capabilities and predict future data center requirements," says Ben Kissell, service solutions manager at Emerson Network Power's Liebert Services (www.liebert.com). "A CFD can pinpoint the airflow's stream throughout the data center as well as locate hot spots and other cooling challenges. Using the data supplied by the CFD model, data center managers can also identify key strategies such as redundancy or

high-density cooling to ensure optimum data center availability."

Turn Down The AC

For many data centers, cooler means better. However, walking into a data center that is kept too cool probably represents a waste of energy. Instead, running data centers at temperatures close to maximum thresholds translates into a much more ecologically friendly alternative—and it also leads to huge power savings. Data center managers also have more leeway to raise temperatures

BONUS TIPS

■ **Use point cooling for hot spots.** Instead of blindly cooling the entire data center to keep the hot spots below a certain range, targeted cooling is much more environmentally efficient. "There is a tendency to address hot spots by setting the overall temperature lower," says Nik

Simpson, an analyst for the Burton Group. "It's better to introduce in-row/in-rack cooling solutions to deal with hot spots and leave the overall temperature at a higher setting."

■ **Use liquid cooling.** Though liquid cooling is nothing new

because ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers) maximum temperature ranges are higher than what they were a couple of years ago. "Many data centers are overcooled where ambient temperatures well below 75 F are maintained," says Nik Simpson, an analyst for the Burton Group. "ASHRAE recommends something closer to 80 F."

Check The UPS Units

It may turn out that a data center's UPS units are consuming far more power than they should. Replacing and/or adding UPS units can go a long way to save energy, thus dramatically reducing a data center's environmental footprint.

"Old UPS equipment may be contributing as much as 20% to your power bill, particularly if the UPS is 10 or more years old," Simpson says. "Monitoring the power distribution network to understand where the losses are is important. For example, there's no sense in spending \$50,000 to put in more efficient PDUs to gain 3% when you could upgrade the UPS and gain 15%." □

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Notebook Market Steady Before iPad Results In

The portable computer market cooled slightly in the first quarter as far as unit shipments were concerned and was down 2.3% sequentially, according to research firm DisplaySearch. But elevated average selling prices raised revenue for the quarter by 1.7%. Apple's iPad was released late in the reported time period and therefore didn't affect the results to a great extent, DisplaySearch says. Still, the tablet-style iPad accounted for 6.5% of the mini-notebook, netbook, and slate PC shipments for the quarter, according to the report. DisplaySearch expects the iPad to grab about a 30% share of the segment in Q2.

Adobe Flash Player To Appear On More Smartphones

Adobe Systems says that its popular Flash media player will be on more than 250 million smartphones by the end of 2012. The software gives cell phone users the ability to play videos and other rich media. It also allows handsets to display Flash-enabled Web sites, an ability lacking in the iPod touch, iPad, and iPhone and which Apple CEO Steve Jobs vows will remain absent from his company's devices. The battle continues, but analysts point out that Apple—in spite of impressive sales of its mobile products—represents only a small fraction of the global smartphone market.

Survey: Small Rise In IT Staff Salaries, Larger Boost For Execs

If you're an IT staffer, there's good news: According to Janco Associates' latest survey, average IT salaries are inching up. In both large and midsized companies, staff salaries have



increased about 0.5% over the past year. If you're an IT exec, the news is even better: CIOs in midsized companies are now making an average of \$169,000, an increase of about 3.7%. And CIOs in large enterprises are now pulling in an average of more than \$181,000, a 7.5% increase. But it's not all good news: The report also points out that middle management and IT support staff remain vulnerable to layoffs, in spite of increasing demand for desktop support.

Gartner Urges Caution For SaaS Use

If your company is looking to SaaS (software-as-a-service) solutions, Gartner says to be sure your organization is a good fit. The research firm predicts that the global enterprise applications market will net \$8.8 billion in 2010; SaaS accounted for 3.4% of enterprise spending for applications in 2009. When investigating SaaS, Gartner suggests companies first determine the value of SaaS to their organization (weighing both pros and cons) and then develop a written policy and governance document. Organizations also need to be sure to research which vendors are a good fit and then lay out an implementation plan.

Linking IT Spending With Business Performance

It's A Matter Of How, Rather Than How Much, Money Is Allocated

by Sue Marquette Poremba

• • •

VIRTUALLY EVERY ASPECT of the business world is somehow supported or touched by IT.

"Regardless if it is financial or marketing or health or even communication, it is all about IT today," says Laura Schultz, senior IT manager with Vonya Global in Chicago (www.vonyaglobal.com).

So it would seem to follow that funding for IT should be a top budget priority for enterprises, but executives and IT managers say that the best business performance is dependent on how, rather than how much, money is allocated.

"You can't spend just for spending's sake," says Jay Weiss, practice leader for the Lawson division at technology company JGI (www.jginfo.com). "In today's society, it would be tough to be a sophisticated organization and not have a certain amount of technology spending. The issue is to find the optimal amount and not waste money."

Aligned With The Overall Business Strategy

One organizational hurdle is learning how IT should be aligned with the overall business strategy. "The company leaders need to figure out where technology can enable revenue enhancement, customer service, and other areas where better information can clearly help management, and then assign the dollars to those specific initiatives," says Weiss. "We like to think of that as developing the technology road map."

The technology road map should explain the following:

- What type of technology is needed.
- Where technology is needed within the organization.
- Who has access to the technology.

Don't Forget Risk Management

A growing subset to IT and spending is risk management.

"There are hundreds of thousands of threats that our clients are concerned with," says Steve Randall, partner with Vonya Global (www.vonyaglobal.com). "And if they aren't concerned about risk, they are in trouble."

Funding for data security and risk management is still a learning process for many companies. Unfortunately, there is a tendency to forget about security until there are government regulations put in place or there was a breach of information.

"We need to think of IT and security married in terms of technology," says Tedd Long, who works in HR innovation for Findley Davies. "If you are going to spend money on technology to build your business, then you also have to spend the money to protect the data that drives it."

Key Points

- IT goals should be aligned with business goals for optimal budgeting.
- IT spending should be based on needs first, wants second.
- Not meeting IT budget needs can put businesses in limbo and stifle growth.

However, not everyone agrees that IT spending is that clear-cut.

"I don't believe in cookie-cutter ratios," says Steve Randall, partner with Vonya Global. "Sometimes you need more technology than tech staff, for instance. Not every company needs to have the latest technologies. How you decide to spend money on IT should depend on your individual needs."

At a company such as Findley Davies, a full-service human resources consulting firm based in Charlotte, N.C., IT plays a huge role. "Technology transformed how HR does its business," says Tedd Long, who works in HR innovation for the company. As companies take on a more global focus, business leaders are learning more about managing their business capital. "IT plays a huge role in that. In order to sustain the huge growth that has occurred, organizations have to spend money to help keep the ball rolling."

Why is investing in IT important for a company? Long says it is because technology helps businesses make decisions. "If you're managing information and you

"The best way to keep the budget effective is to consider what people actually need while minimizing the points of technical failure."

- R-Squared Computing's Louis Rosas-Guyon

in the warehouse. Chances are the warehouse people will never have need for a work email address," Rosas-Guyon points out. "So why waste the resources to provide something that will never be used?"

The tendency for technology overkill can sabotage an IT budget. "We have a love affair with bells and whistles when it comes to technology," Rosas-Guyon says. And that can shift priorities from what is actually needed to keeping up with the electronic Joneses. "The best way to keep the budget effective is to consider what people actually need while minimizing the points of technical failure," he says.

Direct Correlation With Need

Technology spending should have a direct correlation with need. To develop the budget, Rosas-Guyon suggests starting with the number of computers needed and the accompanying hardware. "Once you know the hardware cost, you can figure out the software cost, which is roughly equal," he explains.

He believes that hardware and software upgrades should provide 50% of the overall budget, with the other half supporting IT technicians. "You want to get the maximum productivity out of the technology," he says, "and to do so, you need the support staff that can keep the machines running efficiently."

manage it well, you can make decisions on accurate and readily available information," he explains. "Whereas a company who has not spent money on technology is basically guessing or relying on luck. In the end, no matter what area you're dealing with, without the technology, to be honest, I don't know how you can manage your business."

Tightly Linked

Long believes IT spending and business performance are tightly linked and IT spending needs to be a top priority. But as companies continue to feel the pinch of the recession, money that has been funneled into the IT department is getting more scrutiny. Companies will put a hold on IT spending or cut the budget, he says, but on the other hand, those organizations seem to fall into business limbo. "They know they can do better, but they are always waiting for the budget in order to upgrade to the next version or incorporate the best technology available."

The key, says Weiss, is to change the way administrative leaders think about how IT affects the overall business performance. "IT needs to have a seat at the strategic table and have a voice in order for funds to be spent the right way. After all, technology spending can be the difference between good business or diminishing returns."

A Productive Relationship

8 Things We Hate About I.T.: How to Move Beyond the Frustrations to Form a New Partnership with I.T.

Author: Susan Cramm
Publisher: Harvard Business Press
Price: \$16.95
Format: Paperback, 208 pages

by Kurt Marko

WHINING ABOUT IT is a time-honored office tradition, right up there with complaints about the boss, corporate bureaucracy, and the cafeteria food. Glancing at the title of Susan Cramm's new book, "8 Things We Hate About I.T.," the casual reader can be excused for expecting this to be either just another rant about the futility of working with mindless IT practices or perhaps a Dilbertesque sarcastic skewering of geeky IT staffers.

Yet glancing further down the cover, the subtitle belies a very different intent: "How to Move Beyond the Frustrations to Form a New Partnership with I.T." Cramm, a self-described expert on IT leadership and IT veteran who now leads her own consultancy, delivers a how-to manual for business managers seeking to construct a productive relationship with their IT counterparts.

Fundamental Problem

As Cramm sees it, the fundamental problem with the business/IT relationship is that line managers responsible for product development, top-line growth, and bottom-line profitability know that in this automated, digitized, online age, they increasingly need specific, customized technology solutions, and they understand a productive partnership with IT is required to realize their goals.

Yet, Cramm says, "The IT organization is so busy managing the trees, it can't think about the forest," explaining that IT leaders spend most of their time and effort on operational lights-on activities, reactionary fire-fighting, or ad-hoc enhancement requests. This leaves strategic partnerships and relationship-building with lines of business as elusive goals put off for another day.

This situation is obviously not conducive to long-term business success, but the author

contends that until the glorious day when IT is transformed into a strategic change agent full of business-savvy analysts, line managers must reach out and proactively engage their IT colleagues.

Common Needs & Problems

The book is structured around the "8 Hates"—the common needs, problems, or shortcomings in the business/IT relationship—and how to reconcile and overcome them. The tagline "hates" is deceptive because it implies something deficient, corrupt, or downright nefarious about the "hated" party, yet Cramm directs her preaching to business managers, not IT. In reading the book, she admits business leaders may feel that IT is getting a pass, but she contends that in seeking to catalyze positive change, "the only person you can change is yourself," which will lead to changes in IT. "Although most of the book is focused on nagging you, the business leader, the end of each chapter holds your IT counterparts accountable by summarizing what you should expect from them."

Cramm structures the "8 Hates" into seemingly dichotomous conflicts between the needs of business vs. IT: situations that either business or IT leaders don't like when the other party's priorities predominate. For example, business leaders want service and results and don't like it when IT becomes overly controlling and bureaucratic. Conversely, IT people are offended when business users omit them from project planning and treat them as mere techno-servants. Similarly, business managers are focused on solutions optimized to their needs and are frustrated when IT balks, being forced to

consider the overall infrastructure, security, and cost implications to the enterprise. Each chapter reviews one area of friction and provides guidance for reconciling with solutions that redound to the benefit of both the business and IT.

Instructive Course

Although the book is directed at business managers, Cramm believes IT managers and their teams will find it an instructive course "about IT-business collaboration and engaging business partners in creating a more satisfying and productive relationship." The book serves as an excellent primer for both business and IT leaders in how to overcome a historically fractious relationship and foster a new partnership to their mutual benefit. □

KEY CONCEPTS

- Business managers historically have taken a dim view of IT; this book summarizes the primary areas of conflict, frustration, and distrust between the two sides.
- The book explores these contentious issues with an eye toward creating a mutually beneficial, productive, and ultimately respectful relationship by outlining ways in which business managers can work with instead of against IT.
- Although primarily directed at business managers, who the author contends should be the catalysts for change, the book is also useful to IT managers as a window into the expectations business units have of IT and the problems they face in achieving technology-based solutions.



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